

Report of the

**REGIONAL CONSULTATION ON INSTITUTIONAL CREDIT FOR
SUSTAINABLE FISH MARKETING, CAPTURE AND MANAGEMENT
IN ASIA AND THE PACIFIC**

Manila, the Philippines, 3-7 July 1995



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FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 1996

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M-40
ISBN 92-5-103859-7

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PREPARATION OF THIS DOCUMENT

This is the report of the Regional Consultation on Institutional Credit for Sustainable Fish Marketing, Capture and Management in Asia and the Pacific held in Manila, Philippines, from 3 to 7 July 1995.

The report comprises a record of the proceedings of the Consultation, information on participants, presentation and discussion of country papers and case studies as well as the recommendations of the Consultation.

The appendixes of the report include the programme of the Consultation, a list of participants, a summary of the follow-up proposals adopted by the Consultation and selected papers as presented at the Consultation by the authors.

The report was prepared by Dr. U. Tietze, Fishery Industry Officer, Fishing Technology Service, Fishery Industries Division, FAO, Rome, and Mr. Bishnu P. Shresta, Managing Director of APRACA Consultancy Services.

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Tietze, U.; Shrestha, B.P.

Report of the Regional Consultation on Institutional Credit for Sustainable Fish Marketing, Capture and Management in Asia and the Pacific. Manila, Philippines, 3-7 July 1995.

FAO Fisheries Report. No. 540. Rome, FAO. 1996. 145p.

ABSTRACT

This is the report of the Regional Consultation on Institutional Credit for Sustainable Fish Marketing, Capture and Management in Asia and the Pacific held in Manila, Philippines, from 3 to 7 July 1995.

The Consultation was organized by the Consultancy Services (ACS) of the Asia and Pacific Rural and Agricultural Credit Association (APRACA) with the support of the Fishery Industries Division and the Fishery Policy and Planning Division of FAO.

The Consultation was hosted by the Landbank of the Philippines and attended by forty-five participants who represented national financial institutions, fisheries administrations, fishery industry associations, non-governmental organizations, bilateral and multilateral development agencies, fisheries and rural development projects, inter-governmental bodies and bilateral development agencies. Appreciation of the importance of the Consultation was documented by the fact that only six participants were funded by the organizers while the majority attended the Consultation at their own institution's expense.

The aim of the Consultation was to review the institutional credit arrangements for fish marketing and utilization as well as to discuss on-going credit programmes for the fisheries sector in the light of fisheries management measures and regulations which are presently being introduced in most countries of the region.

The Consultation looked at the current and future investment and credit needs for fish marketing and processing and in relation to community-based fisheries management. Measures to strengthen credit delivery and recovery in general as well as in the fisheries sector were also discussed. National and regional follow-up activities were agreed upon which might enhance the efficiency of fisheries credit operations and facilitate the access to credit for community-based fisheries management and for fish processing and marketing.

The follow-up activities agreed during the Consultation include holding of a regional workshop on insurance for aquaculture and capture fisheries, use of micro-computer software for monitoring of loan recovery, pilot credit programmes in support of community-based fisheries management and at village level, small-scale fish processing plants to be operated by women's associations, establishment of fishery investment support units at national banks and information dissemination through APRACA Consultancy Services.

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1. BACKGROUND AND OBJECTIVES

The consultation was the third meeting on the topic of fisheries credit jointly organized in the Asia and Pacific region by the Asia and Pacific Rural and Agricultural Credit Association (APRACA) and FAO.

The first meeting was an interregional workshop on fishery credit and marketing held at the FAO Regional Office for Asia and the Pacific in Bangkok in November 1989. The workshop (proceedings reported on in FAO Fisheries Report No. 435) was attended by 83 participants from 21 countries in Asia and the Pacific, Africa, Latin America and the Caribbean.

The workshop reviewed and documented past and on-going fisheries credit programmes as well as their linkages to fish marketing arrangements. Based on case studies of successful and unsuccessful fisheries credit schemes with special emphasis on small-scale fisheries, important elements of successful fisheries credit programmes were identified. Guidelines for the management of fisheries credit programmes and revolving credit funds for fishing communities prepared and published by FAO prior to the workshop were introduced and discussed.

A number of national and regional follow-up recommendations were made by the workshop to improve access of the fisheries sector to institutional credit and to enhance the efficiency of credit programmes through appropriate supportive marketing arrangements. Many of these recommendations were then implemented by national financial institutions, bilateral development agencies, fishermen's associations, non-governmental organizations (NGOs), fisheries administrations and other organizations which participated in the workshop.

The follow-up activities to the interregional workshop also included a number of innovative credit programmes designed by national financial institutions and fisheries development projects in Asia which demonstrated how credit can be successfully delivered and recovered with respect to small and medium-scale marine capture fisheries, aquaculture, fish processing and marketing as well as non-fisheries small-scale enterprises carried out by women in fishing villages.

When implementing national activities, it was felt that the sustainability and further dissemination of innovative fisheries credit programmes and their positive results could be further strengthened through greater regional cooperation.

With the objective of enhancing such regional cooperation, a second meeting on fisheries credit in Asia and the Pacific was organized, i.e. the Consultation on the Establishment of a Fisheries Credit Network for Asia and the Pacific which took place in Jakarta, Indonesia, in October 1993. The consultation was hosted by Bank Indonesia, Bank Rakyat Indonesia and Bank Bukopin. It was organized by FAO in cooperation with APRACA Consultancy Services (ACS) and attended by representatives of national financial

institutions from India, Sri Lanka, Thailand, Philippines and Indonesia, fisheries administrations, intergovernmental regional organizations, and representatives of bi- and multi-lateral development agencies and funds.

The consultation reviewed and discussed changes which have taken place in the fisheries sector and the financial sector of the region since the previous workshop. New fisheries credit programmes, credit needs and investment requirements were reviewed and a proposal was prepared for the establishment at ACS of a fisheries credit network: Fisheries Credit Support Services (FISHCRESS) for the Asia and Pacific region.

The consultation proposed that FISHCRESS would carry out the following main functions: establishment and maintenance of a data bank on fisheries credit operations in the Asia and the Pacific region and on other fisheries information of interest to financial institutions and dissemination of information to APRACA member institutions; establishment and maintenance of a roster of fishery credit experts and expertise in the region; facilitation of advisory and consultancy services in the field of fisheries credit and investment; and organization of training activities and technical consultations which, among other things, would help national financial institutions as well as other agencies and organizations involved in credit programmes for the fisheries sector to adjust to new developments effecting the fisheries sectors in the countries of the region.

The consultation reported here was the first technical consultation to be organized by FISHCRESS. It addressed two recent developments in the fisheries sector of the region, i.e. the introduction of management measures in capture fisheries and the increased importance of value-added fisheries products and fish trade in the region. These concerns were also highlighted by the 21st Session of the FAO Committee on Fisheries (COFI) held in Rome in March 1995 which drew attention to the problem of over-exploitation of aquatic resources and to the degradation of the coastal and aquatic environment and called for resource management measures, restructuring of fishing fleets, diversification of fishing effort and better utilization of aquatic products through improved processing and marketing.

The changes associated with the introduction of fishery resource management measures and better utilization of aquatic products require substantial investment and the adjustment and modification of national credit policies and programmes for the fisheries sector.

In this context, the consultation aimed to facilitate the adjustment of national fisheries credit policies and procedures to the above-mentioned changes which are presently taking place in the Asia and Pacific region. It also aimed to familiarize senior managers and executives of national financial institutions with the nature of the changes which are presently taking place in the fisheries sector, e.g. the introduction of fisheries management measures and the occurrence of new opportunities for development, processing and marketing of value-added aquatic products.

The consultation also served as a forum for discussion of activities which had been undertaken since the regional consultation of 1993 with regard to management and better utilization of aquatic resources. These activities included a regional study, undertaken by INFOFISH, on investment requirements for fish marketing and utilization and related

infrastructure, as well as national workshops on community-based fisheries management and related credit needs.

2. ORGANIZATIONAL ARRANGEMENTS, ATTENDANCE AND PROGRAMME

The consultation was organized by the Consultancy Services (ACS) of the Asia and Pacific Rural and Agricultural Credit Association (APRACA) with organizational and administrative support of the APRACA CENTRAB, the training institute of APRACA, and with technical support of the Fishery Industries Division and the Fishery Policy and Planning Division of FAO.

The consultation was hosted by the Landbank of the Philippines and attended by forty-five participants representing national financial institutions, fisheries administrations, fishery industry associations, NGOs, bi-lateral and multi-lateral development agencies, fisheries and rural development projects, inter-governmental bodies and bi-lateral development agencies.

Appreciation of the importance of the consultation was documented by the fact that only six participants were funded by the organizers while the majority attended the consultation at their own institution's expense.

In terms of national representation, in addition to the host country, participants from India, Bangladesh, Sri Lanka, Malaysia and Indonesia took part in the consultation. A list of participants is shown as Appendix II.

The proceedings of the consultation were spread over five days. After the opening session and introduction, the consultation addressed its first major topic, viz. fish marketing and utilization. The afternoon of the first and the following two days were spent on this topic.

The two key presentations on this topic consisted of a lecture on future availability of fishery products for human consumption in Asia and the presentation and discussion of the findings of a regional study of investment requirements for fish marketing and utilization and related infrastructure in Asia.

These presentations were followed by the presentation and discussion of country papers from Indonesia, the Philippines, Sri Lanka, India, Bangladesh and Malaysia on credit programmes for fish marketing and related infrastructure as well as other fisheries related activities. Activities, experiences and plans of bi- and multi-lateral fisheries development projects and fishery industries associations were also discussed.

The morning of the fourth day was devoted to the introduction of community-based fisheries management in the Asia and Pacific region and its implications for credit and investment programmes. In addition to a key presentation on this topic, which included an explanation of the various concepts of fisheries management and the experiences of developed countries in the application of these concepts, a case study on institutional credit in support of the introduction of fisheries management measures in Sri Lanka was presented and discussed.

During the afternoon, the role of women in fish marketing and processing was discussed and how to enhance this role through improved access to institutional credit. The discussion was based on the presentation of a paper on the role of women in fish processing and marketing in Asia.

This was followed by a presentation on the use of micro-computer software for monitoring of loan recovery in fisheries lending.

The evening of the fourth day and the morning of the fifth and final day of the consultation were spent in working groups and plenary sessions during which an action plan for the follow-up to the consultation was formulated and adopted. The programme of the consultation is shown as Appendix I.

3. PROCEEDINGS

3.1 Opening Ceremony

During the opening ceremony of the workshop, welcome addresses were delivered by Mr. Antonio T. Hernandez, Senior Vice President of the Landbank of the Philippines, Mr. Zulkifli Mohd Noor, Secretary General of APRACA and Dr. U. Tietze, Fishery Industry Officer, FAO, Rome. The inaugural address was delivered by Mr. Mukhlis Rasyid, Managing Director of Bank Indonesia and Chairman of the board of supervisors of APRACA Consultancy Services (ACS).

In his inaugural address, Mr. Mukhlis Rasyid gave an overview of the structure and activities of APRACA and stressed its commitment to rural development with special focus on the weaker sections of society. He also mentioned the particular role which ACS had to play in this context which consisted, among other things, in enhancing the expertise of financial institutions in the Asia and Pacific region to support rural development through appropriate credit programmes.

It was then highlighted that fisheries development was a very important part of rural development because of the important role the fisheries sector plays in the Asia and Pacific region with regard to nutrition, employment creation and income generation, particularly for the economically weaker sections of the population. In this context, Mr. Rasyid referred to APRACA's past involvement in fisheries credit and underlined the relevance of this consultation for the association.

The attention of the participants was then drawn to a number of problems which affect fisheries development and fishing communities in the Asia and Pacific region including imbalances in the exploitation of aquatic resources such as overfishing, under-exploitation of stocks, degradation of the environment, processing and marketing deficiencies and the lack of funds and sources of income for unemployed fisherfolk.

It was pointed out that credit could play a beneficial role in fisheries development if other technical, economic and social factors affecting fisheries development were taken properly into account.

With particular reference to Indonesia, Mr. Rasyid invited the participants to recommend practical action plans which could be implemented as follow-up to the consultation.

In his welcome address on behalf of the hosts of the consultation, Mr. Antonio T. Hernandez drew the attention of the workshop participants to the degradation of the coastal environment, including the destruction of coral reefs. He pointed out the open access character of commonly shared natural resources, compared to the agricultural sector, requiring the fisheries sector to focus its attention on concerns such as conservation, natural resource management, enforcement of laws and regulations and financial support.

While Mr. Hernandez defined the purpose of the consultation as exploration of ways and means by which on-going institutional credit programmes can support responsible fishing practices, help improve income opportunities and nutrition of small-scale fishing communities and promote the use of environmentally friendly fishing technologies, he pointed out that the consultation should take into account changes in the macro-economic environment such as the globalization of economic concerns and trade rules and their downstream effects on the fisheries sector and said that they should also acknowledge the seriousness of socio-economic issues such as the low economic status of fishing communities, large household sizes and the difficulties of resource management because of the nature of the natural resource base.

Concluding his opening remarks, Mr. Hernandez observed that fisheries development issues, including the provision of adequate credit support, can best be addressed on a regional basis since the fisheries resource base itself transcends geographical limits.

Mr. Zulkifli Mohd Noor, Secretary General of APRACA, welcomed the participants on behalf of APRACA and underlined the importance of the consultation in the light of the changes which have taken place over recent years with regard to the situation of the fisheries sector in the region and with regard to the overall macro-economic situation. He expressed his appreciation of the efforts of FAO, the participating national financial institutions, government agencies, NGOs, bi- and multi-lateral development agencies and funds, and APRACA Consultancy Services which had been involved in the organization of the consultation.

In view of the regional and global character of the problems to be addressed by the consultation, the need was stressed for regional and interdisciplinary cooperation between the various institutions and agencies involved in fisheries development if the introduction of resource management measures, better utilization of the produce through improved marketing and processing, creation of alternative employment opportunities and the process of economic liberalization were to be conducted successfully.

Dr. U. Tietze, Fishery Industry Officer, FAO, Rome, drew the attention of the consultation to the changes which have taken place in the fisheries sector and the national economies since the last consultation was held in 1993.

In view of these and other changes in the world fisheries situation, the 21st Session of the FAO Committee on Fisheries held in Rome in March 1995 highlighted the problems and dangers of over-exploitation of aquatic resources and the degradation of the coastal and

aquatic environment, and called for restructuring of fishing fleets, diversification of fishing efforts and better utilization of aquatic products, including presently discarded by-products and waste, through improved processing and marketing. Dr. Tietze also pointed out that the Committee urged its members to introduce fisheries management measures and regulations to ensure the environmentally friendly use of aquatic resources for the benefit of future and present generations and to make an important contribution to food security.

It was furthermore stressed that all these changes required substantial investment and would be greatly facilitated through availability of appropriate institutional credit facilities and through the adjustment of on-going credit programmes to changed needs and requirements. In this context, the consultation had a very important role to play.

3.2 Working Sessions

3.2.1 Introduction to Consultation

The introduction to the consultation consisted of two sessions, one organizational and one technical. Both sessions were chaired by Mr. A.B.M. Mahbubul Amin Khan, Deputy Governor, Bangladesh Bank.

The introduction to the organizational arrangements of the consultation was given jointly by Mr. B.P. Shrestha, Managing Director of APRACA Consultancy Services (ACS), and Ms. E.G. Lagmay, Managing Director of APRACA CENTRAP.

The organizational arrangements of the consultation were explained as well as the programme. The programme (shown as Appendix I) was adopted by the participants after incorporating a few changes consisting mainly of additional presentation of papers by bilateral development agencies, NGOs and fishery industry associations.

The technical introduction to the workshop consisted in a paper entitled "Recent trends and changes in fisheries investment and credit" given by Dr. U. Tietze of FAO.

In his presentation, Dr. Tietze examined the economic role of the fisheries sector and in particular the small-scale fisheries sector in terms of production, employment and trade as well as its nutritional importance. It was concluded that the small-scale fisheries sector continued to play a very important role in the region with regard to provision of employment and income in rural areas and with regard to supply of affordable animal protein and thus to food security, particularly for consumers in low income groups. It was also pointed out that after decades of growing production in terms of quantities of fish, resource limitations, over-fishing and over-capitalization have created serious problems.

On reviewing the past performance of externally-funded investment projects and national fisheries credit programmes, it was found that development priorities and opportunities were changing and that in the future the fisheries sector, and particularly the small-scale fisheries sector, would have a crucial role to play with regard to conservation of aquatic resources and creation of a healthy coastal environment in addition to its traditional function of providing employment and income and supplying protein.

The view was held that the fulfilment of these functions would be greatly facilitated through access to appropriate institutional credit facilities which met the criteria of timeliness, simplicity and flexibility. Appropriate institutional credit facilities would enable the fisheries sector to more easily adapt itself to newly introduced fisheries management measures and regulations, to diversify fishing effort away from over-exploited aquatic resources, to introduce sustainable and environmentally friendly, semi-intensive aquaculture methods, to make better use of available scarce resources by improving marketing and processing of aquatic resources and by introducing new value-added products, as well as to generate income and employment outside the fisheries sector.

The presentation continued by reviewing the changes in the macro-economic environment of the region. It was shown that the countries of the region were presently liberalizing their economies and financial markets and that supply-oriented and subsidized credit arrangements were being replaced by demand-oriented and financially viable ones.

In conclusion, it was highlighted that special support measures and assistance programmes were needed to facilitate a smooth transition of fishery credit programmes to suit the needs of a new economic and financial environment as well as newly defined priorities and opportunities for fisheries development.

During the discussion of the introductory presentation, participants endorsed the analysis of the changes which were taking place in the fisheries sector, the financial sector and in the overall economy as well as the need to adjust on-going credit programmes and to introduce new, appropriate credit programmes.

A number of obstacles were identified during the discussion which needed to be overcome if appropriate credit facilities were to be introduced which would suit the new situation. These obstacles included:

- excessive, inappropriate and inflexible collateral requirements of institutional credit programmes in the fisheries sector
- difficulties in determining appropriate levels of investment vis-a-vis appropriate levels of resource exploitation
- insufficient allocation of credit to the fisheries sector when compared to agriculture
- lack of participation of women in fisheries credit programmes
- inflexibility of institutional credit programmes when compared to informal, non-institutional credit programmes.

3.2.2 Institutional Credit for Fish Marketing and Utilization

3.2.2.1 Future Availability of Fishery Products for Human Consumption in Asia

The programme section on fish marketing and utilization commenced with a key presentation paper by Dr. E. Ruckes, Senior Fishery Industry Officer, FAO, Rome, entitled

"Future availability of fishery products for human consumption in Asia". The session was chaired by Mr. A. Sarath de Silva, Deputy General Manager, Bank of Ceylon.

Dr. Ruckes reviewed recent trends in the consumption and trade of fishery products in Asian countries and made an assessment of the prospects of the availability of fishery products for human consumption in the future. He discussed the potential for additional supplies from marine and freshwater resources as well as from culture operations. The importance of reducing waste and increasing efficiency in handling, processing and marketing operations was highlighted. As far as utilization of fish and demand for fishery products are concerned, Dr. Ruckes pointed out that while patterns of fish utilization varied from country to country, most of the fish in Asia was marketed fresh or cured. Fresh fish marketing was more important and curing less important in Southeast Asia than in South Asia, probably as a result of greater local demand for fresh fish and the availability of more infrastructure for chilling and transporting of fish. Regarding innovative products and markets, it was pointed out that in metropolitan cities in Asia, high income levels have created niche markets for live seafood.

Regarding the demand for fishery products, Dr. Ruckes pointed out that with high levels of per caput fish consumption of more than 20 kg, with few exceptions, the demand for fish in the region is currently estimated at just over 12 million tons. This demand is being met from local catches and aquaculture production and still leaves room for considerable export of fishery products.

Southeast Asian countries, as a whole, are exporters of fishery products with a total value of exports of US\$ 9,437 million.

In order to sustain and enhance local supplies and exports, it was considered crucial to harvest currently less favoured species and devise marketing strategies for unfamiliar products together with improvement of handling, processing and distribution. It was also mentioned that even though demand for fishery products is expected to grow at a rapid rate, the region's fishery resources appear sufficient to meet the expected demand well beyond the year 2010, provided so far unexploited fishery resources are tapped and already exploited resources are properly managed, and if adequate attention is given to develop aquaculture and capture fisheries in inland and brackishwaters. It was pointed out that the proper utilization of available and additional resources would be greatly facilitated through the expansion of ice making, cold storage and transport facilities, all of which would benefit from investment and credit support.

After touching upon the results of the GATT Uruguay Round and discussing linkages between environmental concerns and trade, Dr. Ruckes concluded his presentation with an overview of world fish production and an overall assessment of production prospects. The paper is shown as Appendix III.A.

One of the main points raised in the discussion of the paper was the possibility of adding value to the production of small-scale fisherfolk and fish farmers. An FAO-supported project for women in fishing communities in Pangasinan Province and Capiz Province in the Philippines was given as an example of how fish handling, processing and marketing at

village level had been improved with credit support from the Landbank of the Philippines and a private commercial bank.

The project had brought a considerable improvement to the economic and social status of the women and their families and women's associations had been formed in more than 60 villages. It had also improved village-level fish processing and marketing, including the marketing of value-added products.

As one of the follow-up activities of the project, a project proposal had been prepared for a small-scale fish processing plant to be operated commercially at village level and also to be used for training purposes to enhance and improve fish handling, processing and marketing and to strengthen quality control and product quality based on the experiences gained at the time of the project.

Several participating national financial institutions expressed their interest in establishing similar pilot projects which would contribute to the better utilization of available resources, improved and increased supply of protein, and to the creation of employment and income in rural fishing communities. FAO was asked to assist in designing and implementing pilot projects for improved fish handling, processing and marketing at village level with the active involvement of women.

Participants from national financial institutions also stressed that priority should be given to basic fish processing and marketing facilities which had been neglected so far with regard to financing.

An area of concern mentioned by some of the participants was the competition between the use of fisheries resources for domestic and for export markets.

Concluding the discussion, attention was drawn to the fact that financial institutions needed assistance in determining appropriate levels of investment in fish processing and marketing facilities and infrastructure, both in relation to availability of aquatic resources and to market demand.

3.2.2.2 Investment Requirements for Fish Marketing and Utilization and Related Infrastructure in Asia

The second key presentation on the topic of fish marketing utilization, entitled "Investment requirements for fish marketing and utilization and related infrastructure in Asia", was given by Dr. S. Subasinghe, Technical Advisor of INFOFISH. Mr. A. Sarath de Silva, Bank of Ceylon continued as chairman.

Dr. Subasinghe presented the findings of a study on investment requirements for fish marketing/utilization and related infrastructure in Asia which he had carried out in 1994. The study had been carried out under contract with FAO with the objective of identifying opportunities for national financial institutions to finance fish processing and marketing equipment and related infrastructure facilities. The countries included in the study were Indonesia, Thailand, Philippines, Malaysia and Sri Lanka. Dr. Subasinghe pointed out that the countries selected for the study include some major fish producers of the region which

in 1991 accounted for a total annual production of 9.4 million tons of fish - about 10 percent of total world production.

When introducing his paper, Dr. Subasinghe pointed out that in view of the limitation of fishery resources, which was now commonly acknowledged, the importance of according a high priority to the better use of the existing resources cannot be over-emphasized. He then draw the attention of the participants of the consultation to the need to reduce post-harvest losses and pointed out that in some Asian countries, 20 percent of all fish landed is lost before reaching the consumer. Investments in better equipped vessels, installation of ice and fish holds on board and improved facilities for landing, storage and distribution of catch are needed, if post-harvest losses are to be reduced and if the quality of fish to be marketed domestically or exported is to be improved. Facilities at landing sites included electricity, good quality water, adequate supplies of ice, cold room and freezing facilities and waste disposal facilities.

It was pointed out that poor quality limits the use of fish for further processing and deprives the producer of his chance to get a better income from his produce. At the same time it restricts the export potential of landings, in fresh or processed form, and as a result the countries lose valuable foreign exchange.

Based on statistics of exports and imports as percentage of gross fish supply and on unit value of exports, Dr. Subasinghe concluded that investments in the fisheries sector have a strong relationship to raw material and product quality and the subsequent marketability of the product and its profitability. He furthermore pointed out that, mindful of these benefits, increased emphasis should be placed by many fisheries industries on quality and improved marketability. Value addition based on better quality of raw material was seen as an important aspect of the growth of the fishery industry.

A detailed and country description of investment opportunities in the post-harvest sector in Asia concluded Dr. Subasinghe's presentation. Dr. Subasinghe's paper is shown as Appendix III.B.

While appreciating the very interesting presentation by Dr. Subasinghe, the participants observed that financial institutions in Asia were presently hardly involved in the financing of fishery post-harvest activities and facilities. This was due to a lack of familiarity of banks with this sector and to a lack of understanding of the importance of this sector and its possible benefits. Similarly, financial institutions were not aware of investment opportunities and related credit needs.

During the discussion, an important contributing factor was identified in some countries in the region to the lack of involvement of most financial institutions in financing post-harvest activities, and that was that in the past, post-harvest facilities such as ice plants had been operated by the public sector and had not functioned very efficiently.

Another aspect which was highlighted in the discussion was the importance for well functioning quality controls in order to ensure high product quality. This required well designed control systems, well trained personnel and appropriate equipment.

3.2.2.3 The Role of Women in Fish Processing and Marketing in Asia

The paper for this session was presented by Ms. Anselma Legaspi, Division Chief, Bureau of Fisheries and Aquatic Resources (BFAR), Philippines. The session was chaired by Ms. Janice C. Hilay, Bank Executive Officer, Landbank of the Philippines.

In her presentation, Ms. Legaspi described the roles played by women in selected Asian countries, i.e. Bangladesh, India, Indonesia, Malaysia, Pakistan, the Philippines, Thailand and Vietnam in the handling, processing and marketing of fish. She estimated that 50 to 75 percent of the post-harvest activities in these countries, including fish handling, processing and marketing, are carried out by women. In some cases women also carry out and participate in fish culture and fishing operations.

Fish processing activities are undertaken either individually or as a family enterprise. Ms Legaspi furthermore observed that fish marketing is done by individuals, usually by wives of fishermen. She pointed out that traditionally neither marketing nor processing is done through cooperatives.

Ms. Legaspi said that the extent of women's participation in post-harvest activities is related to the level of economic and technological development and the presence of innovations to religion and to socio-cultural values and practices. She pointed out that the introduction of modern fish processing technology, for example, affected the role of women adversely. Innovations such as the introduction of fish auctioning at landing sites in India rendered female fish traders uncompetitive.

After describing the role of women in fish harvesting in each of the countries studied, Ms. Legaspi proposed possible approaches for enhancing the role of women in fish handling, processing and marketing. She concluded that to really strengthen the women's involvement in fishing, fish culture and fisheries related activities, national policies for the development of fisheries should recognize the role of women, their needs, concerns and capabilities and provide necessary support programmes and projects and collect statistics and information to have a reliable data base on women's involvement in the fisheries sector.

The actions proposed by Ms. Legaspi to enhance the role of women in fisheries include formation of cooperatives, training in fish handling, processing and quality control, upgrading the level of education among children of fisherfolk families, establishment of home-based cottage industries using locally available raw materials, and setting up of community-based pilot fish processing plants.

In the discussion of the paper, a strong interest was shown by participants from banks, NGOs, bi-lateral development agencies and fisheries administrations in the possible functioning of community-based pilot fish processing plants. Participants were very interested in sharing the experiences of a FAO-executed and UNFPA-funded project for women in fishing communities in coastal regions of Capiz Province and Pangasinan Province of the Philippines which had been implemented between 1989 and 1994.

The participants were informed that while the project had been very successful in improving women's economic and social roles and in introducing non-fisheries income-

generating activities as well as fisheries-related economic activities in the field of traditional and innovative fish processing and marketing, no donor had yet been found for the establishment of a community-based pilot fish processing plant which had been proposed by the project.

Participants from banks nevertheless expressed their interest in participating in a pilot project which would establish the economic viability of such a plant to be operated by women of fishing communities.

Regarding the access of women to institutional credit, it was pointed out by participants that in some cases married women could not obtain a loan from a bank without the consent of their husbands due to restrictive loan documentation requirements and existing laws and regulations.

3.2.2.4 The Role of INFOFISH in the Promotion of Fish Marketing and Utilization in Asia

The presentation in this session was made by Dr. Subasinghe of INFOFISH. The session was chaired by Mr. Syahoul Bahroen, Manager, Bank Indonesia.

Dr. Subasinghe started his presentation by briefly describing the major areas of fisheries investment, i.e. capture fisheries, aquaculture, handling, processing and marketing of aquatic produce, and infrastructure.

He then gave an overview of INFOFISH as a promoter of investment and fish trade in Asia. It was explained that INFOFISH had originally been established in 1981 as a FAO project. In 1987, INFOFISH became an inter-governmental organization.

Dr. Subasinghe then explained the broad range of services provided by INFOFISH which include information dissemination through its advisory services. Markets and marketing, as well as technical topics such as fishing, processing and aquaculture, are covered by the advisory services.

In addition to publications on trade and markets, INFOFISH handles about 2,000 trade enquiries every year. Training activities are also undertaken by INFOFISH.

Dr. Subasinghe pointed out that INFOFISH, with its comprehensive experience and expertise in the areas of fish trade and processing, capture fisheries and aquaculture, is confident that it is capable of satisfying most of the needs of the Asia-Pacific fishery industry by way of appraisal and monitoring of investment projects and moreover to fulfil this function in an unbiased and objective manner.

The discussion centred on the kind of services INFOFISH could provide to financial institutions and on the question of whether banks should contact INFOFISH directly or should communicate through government channels.

INFOFISH's involvement in the preparation of a regional project for promotion of new value-added products was also discussed. The participants showed great interest in the

project and expressed their support. Dr. Subasinghe will keep ACS informed on further developments with regard to implementation of the project so that some national financial institutions can be associated.

3.2.2.5 Country Presentations

Indonesia

A presentation entitled "Institutional credit for fish marketing and utilization and related infrastructure in Indonesia" was given by Mr. Sasma Jambunan, Chief, Sub Directorate of Small-Scale Fisheries, Directorate General of Fisheries, Indonesia. The session was chaired by Mr. A. Sarath de Silva, Bank of Ceylon.

In his presentation, Mr. Jambunan gave an overview of the fisheries sector in Indonesia.

One of the four main problems of the fisheries sector in Indonesia identified by Mr. Jambunan was that fishermen and fish farmers lack access to competitive fish markets. He described fishermen and fish farmers as "price takers", the prices being determined by the buyers.

Another important problem identified by Mr. Jambunan was that Indonesian fishing ports and landing sites lacked the necessary infrastructure for fish handling and quality control and also ice plants.

Regarding credit, it was pointed out that in Indonesia, nine credit schemes for the fisheries sector were being implemented altogether out of which seven schemes were for fish culture and capture fisheries and two were credit schemes in support of the nucleus estate system (NES) programme which aimed at overcoming bottlenecks found in the existing credit schemes by linking small-scale producers of shrimp and tuna to commercial producers, processors and exporters.

According to Mr. Jambunan, the experiences with these credit programmes for the fisheries sector have not been very encouraging and loan repayment had been poor due to the fact that loans were often being perceived as grants and programme implementation had not been efficient.

Mr. Jambunan pointed out that partly because of these past experiences, the small-scale fisheries sector had no direct access to institutional credit but only through the above-mentioned NES which was just in its beginning stage and had encountered various difficulties and delays in implementation. Under the NES, loans were supposed to be given to commercial enterprises which in turn would finance small-scale fishermen and fish culturist, who would in turn supply raw material, e.g. fish, to the enterprises.

Regarding fish processing and marketing, no institutional credit support was presently available in Indonesia. According to Mr. Jambunan, the scope for investment in cold storage and canneries was limited because of over-capacities. There was, however, a need for more

ice-plants and considerable scope for the development and marketing of new value-added products.

As far as the potential for the improvement and development of fish marketing and processing is concerned, a question was asked in the discussion following the presentation whether the disposal of fish catches in Indonesia was through auction. In reply, it was pointed out that this was not the case and that the catches were still procured by middlemen at pre-fixed rates.

Some participants questioned the validity of the nucleus estate approach to the development of the small-scale fisheries sector as it reminded them of a feudal style middlemen-client relationship which neither created a liberal and competitive economic environment nor any incentives for the development of prosperous small-scale and medium-scale fishery enterprises.

Questions were also raised concerning the terms and conditions of loans, such as interest rates, availability of refinance of credit from Bank Indonesia and availability of credit guarantees. Mr. Jambunan replied that there had been a credit guarantee corporation in the past which had encountered so many problems that it no longer catered to the needs of the fisheries sector. Loans to the fisheries sector need to be guaranteed by commercial enterprises.

As far as interest rates and refinance are concerned it was pointed out that while interest rates are no longer subsidized, there is still refinance available from Bank Indonesia.

Participants from banks in Indonesia expressed a strong interest in learning from other countries of the region how village-based, small-scale fish processing and marketing enterprises can be operated and financed.

Philippines

- Development Bank of the Philippines (DBP)

The first paper from the Philippines, entitled "The Development Bank of the Philippines' experience in financing the fisheries sector" was presented by Ms. Rose May R. Ala, Division Chief, Development Bank of the Philippines. The session was chaired by Mr. Syahoul Bahroen, Bank Indonesia.

At the beginning of her presentation, Ms. Ala gave an overview of the Development Bank of the Philippines' (DBP) involvement in financing the fisheries sector in the Philippines. DBP's involvement in financing aquaculture projects commenced in 1973 in the context of World Bank-funded rural credit projects and continued after 1980 in the framework of World Bank-funded livestock and fisheries projects. In 1992, DBP was designated by the Agricultural Credit Policy Council of the Philippines (ACPC) as conduit bank of the credit seed fund which is funded from government counterpart funds under the Fisheries Sector Programme (FSP), in turn funded by the Asian Development Bank. The FSP aims to effect responsible resource management, environmental rehabilitation, poverty alleviation and improved productivity in the fisheries sector of the Philippines.

Under this programme, DBP is providing loans for aquaculture projects in six priority regions and also finances loans for alternative livelihood projects and rehabilitation projects for aquaculturists which have been affected by the outbreak of a volcano. A total amount of Pesos 260 million was made available, out of which Pesos 173 million had been disbursed for 234 projects by the end of the first quarter of 1995. The majority of projects were milkfish culture projects and the smaller part culture of grouper, tilapia, crabs and prawns. The collection rate was 87.35 percent, while the past due ratio was US \$3.69.

Ms. Ala also mentioned that prior to its involvement in the FSP, DBP had been involved in financing of deep sea fishing to the members of a fishermen's cooperative. The deep sea fishing operation was a joint venture and aimed at exports of tuna to Japan. It had been conceived as a model project by DBP and had all the elements of technological and economic viability. However, it had turned out a complete failure, due simply due to power rivalry among the officers of the cooperative. This was an example that group lending can be disastrous if the group, in this case a cooperative, does not function well.

While the above areas of finance, i.e. aquaculture, alternative livelihoods and deep sea fishing, are clearly related to management issues and to the conservation of aquatic resources through creating alternative employment opportunities and diverting fishing effort from heavily exploited in-shore resources, there has not been any focus by DBP on fish marketing and processing. In the past, however, finance had been extended to post-harvest facilities such as ice plants and cold storage. It was explained that in the past DBP had a fisheries credit scheme where marketing was an integral part, but this scheme did not work well for reasons which had nothing to do with technical or economic viability.

The present lack of involvement of DBP in financing post harvest is one of the reasons why this sector is presently not receiving much attention in the FSP and other development programmes for the fisheries sector which is why DBP has not been approached to extend credit for fish marketing and processing.

In the discussion following Ms. Ala's presentation, the question was raised how fish farmers who receive loans from DBP dispose of their produce, and whether they receive a fair price. Ms. Ala replied that this was left to the fish farmer and that usually fish brokers were involved in the process who were basically fish traders cum moneylenders.

In reply to a question, Ms. Ala responded that DBP extended loans to individuals as well as to cooperatives.

Some participants commended DBP on their comparatively high loan collection rate in their fisheries lending and asked whether the figure stated included payments from a credit guarantee fund. It was pointed out that this was not the case but that the figure was based on genuine loan repayments from borrowers who had received a loan from DBP.

- Philippine Crop Insurance Corporation (PCIC)

The second paper from the Philippines, entitled "The Philippine Crop Insurance Corporation Fisheries Sector Programme Credit Guarantee Scheme", was presented by Mr. Manuel F. Aranza, Department Manager, Philippine Crop Insurance Corporation. The paper

is shown as Appendix III.C. The session was chaired by Mr. Syahoul Bahroen, Bank Indonesia.

In his presentation, Mr. Aranza explained the nature, underlying concept, objectives and basic features of the credit guarantee scheme for small-scale fishermen which is being implemented by PCIC. He also talked about operational procedures, experiences and problems encountered in the implementation of the scheme.

As far as the nature and the underlying concept of the scheme is concerned, the PCIC-FSP Credit Guarantee Scheme is a sub-component of the credit component of the Fisheries Sector Programme of the Department of Agriculture (DA) which is coordinated by the Agricultural Credit Council of the Philippines (ACPC). The role of the sub-component was explained as a risk-reduction mechanism for bank lending in the context of the FSP which aims to effect responsible resource management, environmental rehabilitation, poverty alleviation and improved productivity in the fisheries sector of the Philippines.

Mr. Aranza pointed out that the credit guarantee scheme was explicitly in support of the implementation of responsible fisheries resource management practices and aimed to encourage banking institutions and lending conduits to extend credit to small-scale fishermen for fishery-related projects and alternative land-based livelihood activities without being concerned about collateral. It also aims to encourage the formation of associations among fisherfolk as a desirable mechanism for fisherfolk development.

As far as the basic features of the scheme are concerned, Mr. Aranza explained that the credit guarantee arrangement covered all possible causes of default. The extent of guarantee depends on the loan recovery performance of the lender and ranges from 65 to 85 percent of the outstanding balance of the loan principal. There is a guarantee fee of about 2 percent of the outstanding balance. Eligibility criteria and operating procedures are shown in the paper together with the various forms used in the scheme.

Mr. Aranza then described the experiences and results so far achieved. Loans worth Pesos 153 million extended to more than 10,000 borrowers had so far been guaranteed. In terms of type of projects, it was pointed out that fishery-related projects accounted for roughly 95 percent out of which 60 percent were capture fisheries projects and 35 percent aquaculture projects. The remaining 5 percent were land-based activities.

It was pointed out that claims were submitted in respect of only 4.1 percent of all loans guaranteed, many of which had not been supported by the required documentation so that the number of claims which were eventually settled was much lower.

While the performance of the credit guarantee was assessed as quite successful so far, Mr. Aranza pointed out that it had not managed to attract many rural banks to participate in the fisheries credit programme. Other weaknesses of the FSP which limited the amount of credit to be disbursed in spite of the available credit guarantee were lack of feasible alternative land-based activities and lack of a sufficient number of viable fishermen's associations.

In the discussion following Mr. Aranza's presentation, three issues were raised, i.e. the question of whether the credit guarantee scheme was linked to an insurance cover in case of natural calamities, whether the guarantee fee was actually sufficient to cover the cost of the scheme, and whether the fee was actually paid by the lender or whether it was passed on to the ultimate borrower.

Regarding the first query, it was pointed out that the credit guarantee also covered the case of default due to natural calamities and thus also fulfilled the function of an insurance cover. Regarding the percentage of the fee, Mr. Aranza replied that it was not sufficient to cover the cost of the scheme and that the scheme was subsidized by the government. He also explained that the fee was passed on to the lender when lending to cooperatives.

- Landbank of the Philippines (LBP)

The third paper from the Philippines, entitled "Credit assistance to fisherfolk cooperatives: the Landbank experience", was presented by Mr. Antonio T. Hernandez, Senior Vice President, Landbank of the Philippines. The session was chaired by Ms. Janice C. Hilay, Landbank of the Philippines.

In his presentation, Mr. Hernandez gave an overview of fishery resources and fishery production in the Philippines and pointed out that Landbank's involvement in the fisheries sector only commenced in the late eighties. He then described the main concerns in the sector as consequences of many conflicting resource use issues that characterize open access fisheries and the rapid concentration of communities in coastal areas where exploitation of natural resources are most intense. The most critical issues and problems were defined as depleted traditional fishing grounds, under-exploitation of non-traditional areas and species and inequitable allocation of the fisheries resources as well as poverty prevailing in small-scale fishing communities.

Mr. Hernandez described the Fisheries Sector Programme (FSP) which was launched by the Government of the Philippines with financial assistance from the Asian Development Bank and which aims at regeneration, conservation and sustainable management of aquatic resources, rehabilitation and protection of the coastal environment, alleviation of poverty and occupational diversification of small-scale fishermen, expansion and intensification of aquaculture and diversification of fishing effort of commercial fisheries to off-shore areas. It was explained that Landbank plays a major role in the credit component of the FSP. The programme was lodged into the bank's existing lending facilities using the wholesale lending approach through its network of field offices and cooperatives all over the country. Consistent with the bank's wholesale approach to lending, credit disbursements are confined to fishermen's associations/cooperatives which in turn retail the funds to their individual members. Mr. Hernandez explained that there are, however, instances where cooperatives also undertake and manage projects as a cooperative.

Regarding the credit assistance provided by Landbank since the beginning of the FSP four years ago, it was explained that Landbank had so far lent the equivalent of more than US \$18 million as of December 1994, benefitting 621 fishermen's cooperatives and associations with 32,254 members.

With regard to the type of project it concerns, aquaculture accounts for 57 percent of the total disbursements, capture fisheries for 31 percent, fish processing and trading for 5 percent, livestock, crop production and cottage industries for 4 percent, and fixed assets and other activities for 3 percent of the total loan disbursements. As far as the credit delivery mechanism is concerned, two major constraints were identified by Mr. Hernandez, i.e. a lack of organized fishermen in the project area which translated into a dearth of eligible borrowers and a lack of alternative livelihood projects.

Mr. Hernandez concluded his presentation by elaborating on Landbank's current and future thrust in its credit assistance to the fisheries sector in the Philippines which is in line with the Fisheries Management and Development Programme (FMDP) of the Philippine Government as part of the present Medium Term Agricultural Development Plan (1993-1998).

The FMDP aims at doubling aquaculture productivity, doubling the number of priority bays/gulfs for coastal resource management implementation, improving the operational efficiency of the commercial fishing fleet, improving the capacity of coastal municipalities and others to enforce fisheries regulations and laws and the reduction of post-harvest losses and promotion of value-added aquatic products. While much of Landbank's focus will be on aquaculture, marketing and production, special emphasis will be given to processing and marketing of semi- and fully processed fish by fisheries cooperatives and associations.

In the discussion of Mr. Hernandez' presentation, a number of questions were raised regarding the wholesale lending approach of Landbank, the role which NGOs play in organizing fishermen associations and how the NGOs funded their activities. In response, it was explained that NGOs were funded by the government with resources allocated for their activities in the FSP. In most cases, local NGOs were involved rather than national ones.

One participant pointed out that a USAID-funded project was being prepared which would strengthen the national federation of NGOs working in the fisheries sector of the Philippines.

The discussion also centred on operational aspects of Landbank's fisheries credit operations such as interest rates, transaction costs, repayment rates, etc. Overall loan repayment was considered satisfactory by Landbank.

Sri Lanka

A paper entitled "Institutional credit for fish marketing/utilization and related infrastructure in Sri Lanka" was presented by Mr. Asaka de Silva, Deputy General Manager, Peoples Bank, Sri Lanka. The session was chaired by Mr. Syahoul Bahroen, Bank Indonesia.

Mr. de Silva's presentation focused on the fisheries credit operations of the People's Bank, Sri Lanka, which accounted in the past for about 44 percent of all bank lending to the fisheries sector in Sri Lanka. Unfortunately, the major part of the bank's loan disbursements had been in the North and East of the country which had become gradually inaccessible and

where fishing operations had ceased entirely in the second half of the eighties due to large-scale and continuous civil disturbances.

These events seriously hampered the fisheries credit operations of the bank as far as recovery of loans and expansion of credit programmes to new areas and activities were concerned, including financing and marketing of value-added aquatic products, aquaculture, off-shore fishing, etc. The question of supporting coastal resource management through credit programmes did not even arise, since coastal areas had become increasingly inaccessible. Mr. de Silva's presentation of the fisheries credit operations of the Bank of Ceylon should be seen against this background.

The opportunities which exist in Sri Lanka for banks which operate in areas without civil disturbances can be seen from the case study of the adaptation of the fisheries credit operations of the Bank of Ceylon to fisheries management measures which are described below.

In his presentation, Mr. de Silva described Sri Lanka's fisheries sector as one of the major potential areas for economic expansion in the country. He referred to so far under-exploited off-shore resources in the country's Exclusive Economic Zone and to the fact that fish constitutes a popular ingredient in the local diet and plays an important role in the supply of animal protein.

It was explained that while the fisheries sector only contributed 2.8 percent to the GDP of Sri Lanka, it provided direct employment for as many as 150,000 fishermen while many more were employed in related and supporting activities such as fish marketing and processing, boat building, etc.

As far as credit for fish marketing, processing and related infrastructure is concerned, Mr. de Silva pointed out that credit was available from banks, fisheries cooperatives, government agencies and in some areas from NGOs.

While stating that in principle commercial banks in Sri Lanka provide credit for fish marketing and processing to individuals, companies and fisheries cooperatives, Mr. de Silva observed that the major part of institutional credit in Sri Lanka has traditionally been provided for fish production, and that the financing of fish utilization and marketing and related infrastructure has only played a minor role in institutional credit operations.

As far as future opportunities, government policies and priorities for the development of the fisheries sector in Sri Lanka in general and for the development of fish utilization and processing in particular are concerned, Mr. de Silva expected that as most public enterprises and government functions in the fisheries sector had recently been privatized, the private sector was expected to invest on a larger scale than in the past in facilities such as ice plants, cold storage, insulated transport vehicles and fish processing facilities. Likewise, fisheries cooperatives are expected to become increasingly involved in fish marketing and processing.

Mr. De Silva concluded that these developments opened up new opportunities for financial institutions in Sri Lanka to become more actively involved in the financing of fish utilization and marketing.

The discussion following Mr. de Silva's presentation focused on the status of the fish processing industry in Sri Lanka and its credit needs.

A participant from a small-scale fisheries development project in the Bay of Bengal brought to the attention of the consultation a credit programme for bicycle fish traders that is under preparation in Colombo in cooperation with People's Bank and the project. It was suggested that there was much scope to provide credit to the small-scale fisheries sector so that its role in fish utilization and marketing could be enhanced.

India

The paper from India, entitled "Institutional credit for sustainable fish marketing/utilization, capture and management in India", was presented by Mr. M.T. Bhartiya, Assistant General Manager, National Bank for Agriculture and Rural Development (NABARD). The session was chaired by Ms. Janice C. Hilay, Landbank of the Philippines.

In his presentation, Mr. Bhartiya described the various institutions in India which provide credit to the fisheries sector. They include commercial banks, state land development banks, regional rural banks, state cooperative banks, the National Cooperative Development Corporation (NCDC) for fishery cooperatives, the Shipping Credit and Investment Company of India (SCICI) and state finance corporations. It was explained how this variety of institutions caters to all segments of the fisheries sector, ranging from traditional small-scale fishing communities to modern, commercial and export-oriented fishery enterprises.

Mr. Bhartiya went on to explain lending policies, norms and conditions prevailing in lending to the fisheries sector in India, such as interest rates, terms of loans, documentation and collateral requirements, credit guarantee arrangements, etc. An overview followed of the involvement of financial institutions in India in the field of fish processing and marketing and analyzed the changes which had taken place in the context of economic liberalization in India.

Mr. Bhartiya explained the role of his own institution, the National Bank for Agriculture and Rural Development (NABARD), which played a rather unique role in the region in so far as it was a national institution which was involved in research and development activities and prepared projects in all areas of agricultural, forestry, fisheries and rural development, conducted technical, economic and financial feasibility studies, provided refinance to financial institutions and monitored and coordinated their lending activities.

Concluding his presentation, Mr. Bhartiya said that he considered the institutional arrangements for agricultural and fisheries credit in India as comprehensive and sufficient.

He mentioned that institutional credit arrangements were bound to undergo changes in the near future in the light of further economic reforms and reforms in the financial sector which ultimately aimed at deregularization and liberalization of the Indian economy.

Regarding shortcomings and constraints in meeting the credit needs for fish utilization and marketing and fisheries management in India and the further development of the fishery industry, Mr. Bhartiya observed that there was a lack of innovation and

knowledge regarding the processing and marketing of value-added products and environmentally friendly and sustainable aquaculture technologies in India as well as a deficiency with regard to the efficient implementation of fisheries management regulations and he expressed his interest in sharing the experiences of other countries.

With regard to export-oriented processing, Mr. Bhartiya mentioned the need to modernize outdated freezing plants in India and to introduce quick freezing technologies.

The discussion of Mr. Bhartiya's presentation centred on the role of NABARD in project formulation, refinance and coordination of credit programmes for the fisheries sector.

A number of interventions were then made regarding the status of fish marketing and processing in India.

Interventions were also made regarding the role of fisherfolk associations in fisheries management in general and the leasing of water bodies by fisheries cooperatives in particular, and it was queried whether these cooperatives played any role in the management of these water bodies. It was explained that the lease periods were too short to allow the cooperatives to play any substantive and meaningful role in management.

Bangladesh

A paper entitled "Institutional credit for production, capture and marketing of fish, shrimp and other aquatic resources in Bangladesh" was presented by Mr. A.B.M. Mahbubul Amin Khan, Deputy Governor, Bangladesh Bank. The session was chaired by Mr. M.T. Bahrtiya, National Bank for Agriculture and Rural Development (NABARD), India.

Mr. Khan gave a comprehensive overview of the fisheries sector in Bangladesh and also of the various institutions and agencies which play a role in the sector. He commenced his presentation by pointing out that Bangladesh was one of the largest deltaic regions of the world. Fish production reached 1.2 million tons during 1994/95 and fish accounts for 80 percent of the animal protein intake in Bangladesh. The fisheries sector employs a full-time labour force of 1.27 million and contributes 3.5 percent to the GDP of Bangladesh. Women were reported to be very much involved in fish processing for domestic as well as for export markets.

As far as fisheries development efforts in Bangladesh are concerned, Mr. Khan highlighted the efforts of the government and NGOs regarding promotional and extension work in support of the introduction of modern, artificial fish and shrimp breeding techniques, fingerling supply, stocking of open water bodies and the implementation of fishery management and conservation measures. It was pointed out that the national fisheries policy underscored the importance of fish and shrimp culture for meeting local needs and expanding export earnings.

Regarding the role of the banking sector, Mr. Khan stressed that, under the direction of the central bank, banks in Bangladesh had made their own contribution to the development of the fisheries sector by providing credit for a variety of purposes and facilities such as fish and shrimp farming, hatcheries, capture fisheries, including non-mechanized and mechanized

fishing boats and seagoing trawlers, fish processing and shrimp/fish export, including ice-plants, processing plants, refrigerated vans, etc. Over the last two years, banks had particularly increased their lending for semi-intensive shrimp culture.

Among the shortcomings and constraints which had hampered expansion of fisheries credit in the past, Mr. Khan identified poor loan recovery as an important factor. Because of this, banks are now insisting on collateral and on technical support from fisheries extension officers.

In order to expand credit supply in support of developing the fisheries sector and maximising the economic benefit to be derived from it, a number of measures are being implemented by the Government of Bangladesh, including the following:

- commercially-oriented and technology based fish and shrimp culture projects are being treated as industries for the purpose of tax holidays and extending bank credit at subsidized interest rates
- amendments to laws and regulations to extend tenure periods for areas suitable for shrimp culture
- implementation of credit guarantee scheme by Bangladesh Bank and waiver of collateral requirements for setting up shrimp hatcheries, fish feed mills, fish/shrimp processing plants, commercial shrimp/fish farms, fishery equipment manufacturing
- special collateral free credit programmes are being set up for agro-based enterprises, including fisheries.

Mr. Khan also pointed out that Bangladesh Bank, as the central bank of the country, provides motivational training for financing fish farming and shrimp culture by organizing training workshops for branch managers, local government officials, extension staff, prospective fish farmers, etc.

During the discussion following this presentation, the question was raised whether the various measures adopted by the government and by Bangladesh Bank in support of the fisheries sector had managed to overcome the reluctance of banks to finance the sector. Mr. Khan replied that there was still reluctance even though significantly less than before. The government and Bangladesh Bank involved more NGOs in fisheries credit programmes to compensate for any lack of involvement of banks.

When asked for the reasons why loans for ice plants had not been repaid the reply was that improper appraisal of loan applications was part of the problem and that there was presently an overcapacity of ice plants in Bangladesh.

Other queries were aimed at the implications of economic liberalization and financial sector reform for fisheries credit in Bangladesh. Some interventions suggested that in a liberalized and deregulated environment, commercial banks were only interested in financing commercial enterprises and not in financing small-scale rural producers, and that it was difficult for a central bank to have any influence on credit flows.

Some participants queried whether there were any institutional savings schemes in Bangladesh for traditional fisherfolk and whether there were credit schemes in support of alternative income-generating activities for rural fisherfolk. Mr. Khan pointed out that privatization was not enough and that a reform of the marketing system was needed to ensure the full participation of the producer in the economic process. With regard to credit for small-scale producers, Mr. Khan suggested using either NGOs or fish traders as channels for credit.

Malaysia

A paper entitled "Institutional credit for fish marketing and related infrastructure in Malaysia" was presented by Mr. Hasshim B. Mohammad, Manager, Bank Pertanian Malaysia (BPM). The session was chaired by Mr. Mohd Shukree Bin Md. Zain, Branch Manager, BPM.

At the outset, Mr. Hasshim described the fisheries sector in Malaysia in terms of fishery resources and production. He stated that in 1992 Malaysia produced a million tons of fish from capture fisheries and 79,000 tons through fish culture. In the same year, it had to import 136,000 tons of fish to satisfy the domestic demand while only 26,000 tons were exported. Mr. Hasshim concluded that the fisheries sector played a less important economic role in Malaysia compared with other countries in Southeast Asia.

Mr. Hasshim continued his presentation by describing the fish marketing structure in Malaysia where middlemen/wholesalers cum moneylenders play a central role like in most other countries of the region. He went on to describe the institutional credit facilities available to the fishermen. The most common form is the credit system provided by Bank Pertanian Malaysia (BPM), the agricultural bank of Malaysia. Also funds originating from the Fisheries Development Authority of Malaysia (LKIM) and from the Fisheries Department (DOF) are channelled through BPM.

Regarding BPM's credit facilities for fish marketing, two lines of credit can be distinguished, i.e. a special, integrated agricultural loan (SPKP) and BPM's fisheries credit scheme. The SPKP is a special government fund for agricultural development. The Malaysian Government provides BPM with funds for on-lending at 4 percent interest while BPM charges the ultimate borrower 5 or 6 percent depending on the income of the borrower.

It was explained that in order to avail of a loan under the SPKP scheme, borrowers must have a recommendation from LKIM and DOF and from the SPKP committee which is composed of representatives of LKIM, DOF, Agriculture Department, Farmers Association Authority and BPM. Loans are available for fishing boats of medium size, fishing gears and for various types of aquaculture as well as for related working capital requirements.

BPM's own fisheries credit scheme was described as comprehensive and no recommendation is required. Twenty percent of the principle is required as equity contribution of the borrower. The maximum loan amount is RM 50,000 and the maximum repayment period is five years. Larger loans up to RM 5 million are available from the Asian Japanese Development Fund at 6.5 percent interest.

As far as future trends and directions are concerned, Mr. Hasshim pointed out that BPM was slowing down its lending for fishing boats due to deteriorating repayment of loans which was possibly related to reduced financial viability because of heavily exploited resources. Instead, BPM was increasing its lending for downstream activities including fish processing and marketing.

The discussion after Mr. Hasshim's presentation focused on the financial viability of credit operations and interest rate subsidies. Responding to queries, Mr. Hasshim pointed out that while BPM's lending operations were quite cost efficient, the interest rates were subsidized in accordance with prevailing government policy in Malaysia.

3.2.3 Community-based Fisheries Management and Related Credit Requirements and Experiences

3.2.3.1 Community-based Coastal Fisheries Management in Asia and the Pacific

A paper entitled "Community-based coastal fisheries management in Asia and Pacific" was presented by Dr. M. Hotta, Senior Fishery Planning Officer, FAO, Rome. The paper is shown as Appendix III.E. The session was chaired by Mr. Mohd Shukree Bin Md. Zain, Bank Partanian Malaysia (BPM).

In his introduction, Dr. Hotta made reference to the IPFC Symposium on Socio-economic Issues in Coastal Fisheries Management which was held in Bangkok in November 1993. The symposium had concluded that fisheries management programmes implemented in the region had rarely contributed to the improvement of fishermen's incomes. It had also noted that the problem of low fishermen's incomes would not immediately disappear with the removal of open access which had previously been considered as one of the major reasons for the poor socio-economic status of fishermen's households.

The symposium had further observed that "top down" centrally controlled management regimes were not effective since they did not reflect fishermen's needs with regard to management of aquatic resources. It was proposed to actively involve fishermen in the process of planning, designing and implementation of fishery management schemes.

Mr. Hotta pointed out that many governments were already considering new means of managing fisheries by integrating participatory approaches into fishery management strategies. While traditional fishery management considers mainly biological, conservation and economic aspects of fishery management, participatory approaches also pay attention to the importance of social and cultural aspects of fishing communities in addition to economic and biological factors.

Dr. Hotta then referred to successful examples of community-based fisheries management which have shown that there is a high rate of adherence to fishery regulations if fishermen play decisive roles in management decisions.

The case of Japan was then referred to as an example for an effective system of community-based fisheries management which is operated by fisheries cooperatives. These cooperatives are given exclusive fishing rights to control fisheries resources adjacent to the

villages where the cooperative members reside. The legal status of fishing rights in Japan is equal to that of land ownership and coastal areas under the jurisdiction of fisheries cooperatives are, in effect, the private property of the fisheries cooperatives concerned.

It was explained that the area covered by fishing rights stretches up to 10 km from the shore and covers a coastline of two to three kilometres. Unless fishermen are members of a cooperative, they are not allowed to fish in these areas. This legal arrangement obliges inshore fishermen to join cooperatives.

Mr. Hotta then referred to traditional arrangements for community-based fishery management in the Asia and Pacific region, such as the *sasi* system in Maluku in Indonesia and community-based fisheries management in Vanuatu. He then described basic requirements which must be fulfilled if community-based fisheries management is to function well. These include, among other things, cohesive community organizations, territorial use rights in fisheries (TURF): economic benefits, participation of communities in monitoring, control and surveillance of regulatory measures.

Dr. Hotta concluded his presentation by stating that one of the merits of community-based fishery management was its cost effectiveness. Enforcement of fisheries regulations was greatly facilitated when fishermen understood the purpose of the regulations and supported them.

In the discussion following Dr. Hotta's presentation, the question was asked as to what role fisheries cooperations in Japan played with regard to conservation and rehabilitation of fishery resources. When Dr. Hotta replied that among other things cooperatives undertook stocking programmes in marine waters, some participants suggested that the FAO Bay of Bengal Programme should assist member countries in this field.

Participants also expressed interest in receiving publications which describe Japan's experience with community-based fisheries management programmes.

Other topics of discussion were rotation systems of use of fishing grounds under the jurisdiction of fisheries cooperatives and the government's role in registration and administration of fishermen cooperatives in Japan.

3.2.3.2 Fisheries Management Measures in Developed Countries

A lecture was given by Dr. M. Hotta, FAO, Rome, on fisheries management in developed countries. Mr. Mohd Shukree Bin Md. Zain, Bank Pertanian Malaysia (BPM), chaired the session.

In his presentation, Dr. Hotta described and explained the various catch quota systems adopted in developed countries (North America, Europe, Australia, New Zealand). He concluded that a catch quota system is a right to harvest a portion of the Total Allowable Catch (TAC), either in terms of absolute quantity or in terms of a percentage which is individually allocated to fishermen, fishing boats and enterprises. He then recalled that in the initial stages of TAC application there were no gear restrictions and that this had a number of negative effects. These included intense investment competition, the reduction

in the number of fishing days and a decline in fish prices. In order to solve these problems, the Individual Quota (IQ) and Individual Transferable Quota (ITQ) systems were devised.

It was explained that both IQ and ITQ systems have proven that competition in investments has been reduced and that they gave an incentive to fishermen to carry out fishing in a more cost-effective manner. However, it was also noted that it is difficult to apply these systems to the Asian region where multi-species fisheries are carried out and where fish is landed at many ports which causes difficulties in monitoring and enforcement.

The discussion on Mr. Hotta's second presentation centred on operational details and the impact of fisheries management measures used in developing countries and their applicability to multi-species fisheries of many tropical developing countries.

3.2.3.3 Adaptation of National Credit Programmes to Fishery Management Measures -A Case Study from Sri Lanka

A paper entitled "Adaptation of national credit programmes to fisheries management measures - a case study from Sri Lanka" was jointly presented by Dr. U. Tietze, FAO, Rome, and Mr. A. Sarath de Silva, Bank of Ceylon. The session was chaired by Mr. Mohd Shukree Bin Md. Zain, Bank Pertanian Malaysia (BPM).

The presentation started with a description of the National Fisheries Development Plan of Sri Lanka. This was followed by an overview of the level of exploitation of Sri Lanka's aquatic resources and an identification of opportunities for future development and related investment needs. The presentation distinguished between investments which were to be undertaken by the private sector and investments which were to be undertaken by the private sector.

It was highlighted that most of the investments in the fisheries sector envisaged for the near future, i.e. about 33 percent, were public sector investments for the rehabilitation and development of infrastructure such as fishing harbours, most of which were to cater to the need of off-shore fishing operations.

The second most important field of investment, accounting for about 25 percent of all investments foreseen to be undertaken in the fisheries sector in the near future, were investments in off-shore fishing craft and gear to be undertaken by the private sector. These off-shore fishing vessels are supposed to benefit from the shore facilities which are to be established by the public sector as part of the first group of investments.

The third and fourth most important areas of investment to be undertaken by the private and the public sector respectively were in the field of fish storage, processing and marketing (13%) and in fisheries research, training, extension and fisheries management (13%).

Investments in the culture of shrimp and fish to be undertaken by the private sector and investments for the creation of alternative employment opportunities to be undertaken by the private sector accounted for 8 and 6 percent respectively of all investments to be

undertaken in the fisheries sector of Sri Lanka according to the National Fisheries Development Plan.

Summarizing their overview of the investments foreseen for the fisheries sector, Messrs. de Silva and Tietze pointed out that all of the investments were clearly related to fisheries management measures, i.e. to the diversion of fishing effort from heavily exploited in-shore areas to under-exploited off-shore areas, the better utilization of existing resources through improved fish utilization and marketing, to the promotion of culture of aquatic products, the creation of alternative employment opportunities for small-scale fisherfolk outside the fisheries sector in order to reduce fishing effort, as well as explicitly to fisheries management, extension, research and training.

The presentation went on to describe the fisheries management measures which were presently being introduced in Sri Lanka.

Messrs. de Silva and Tietze then turned to the rural credit scenario in Sri Lanka and described recent changes which have taken place which were characterized by deregulation, liberalization, promotion of the private sector and by the introduction of measures to improve the financial viability and efficiency of financial institutions and their credit operations.

This was followed by a review of past and on-going fisheries credit programmes of Bank of Ceylon which is presently the largest institutional source of credit for the fisheries sector in Sri Lanka, and by an assessment of the appropriateness of the on-going fisheries credit programmes of Bank of Ceylon vis-a-vis fisheries management in Sri Lanka, and an assessment of the effectiveness of these programmes in terms of economic impact and loan repayment.

It was shown that the credit schemes for the fisheries sector in Sri Lanka had been well modified over the years to cater to fisheries management related investment needs as well as to small-scale fish marketing and processing. Medium- and large-scale fish/shrimp marketing and processing was successfully catered to by recently privatized investment banks in Sri Lanka which were also in a position to provide long-term credit.

Regarding the financial viability of credit schemes for the financial institutions which operate them, the presenters observed that the rate of loan recovery in the fisheries credit schemes of Bank of Ceylon had greatly improved over the years. The following elements of successful fishery credit schemes were identified by Messrs. de Silva and Tietze:

- disbursement of capital subsidies only after loan is fully repaid
- careful appraisal of loan applications
- lack of any subsidy elements in credit scheme
- realistic cash flow projections and repayment schedules
- proper selection of borrower
- timely processing of loan applications and loan disbursements
- regular monitoring of loan use and loan repayment
- efficient arrears control
- adequate training of bank staff

- efficient cooperation with fisheries administration in preparation of lending programmes, conduct of feasibility studies and monitoring of loan use.

Concluding their presentation, the authors of the paper suggested a number of ways how credit programmes could be further improved to more efficiently tap so far unutilized development potentials in the fisheries sector. Among the measures suggested was the establishment of a fishery investment support unit at Bank of Ceylon which would enhance and make more efficient use of the fisheries expertise within the bank.

During the discussion following the presentation, a number of questions were answered concerning operational details of credit schemes with satisfactory loan repayment records.

Another group of interventions was made regarding which proportion and which sections of small-scale fishing communities should be considered bankable and as having sufficient absorption capacity for institutional credit, and which proportion of small-scale fisherfolk had to be taken care of by NGOs and/or had to be left to the informal sector as far as their credit needs are concerned.

3.2.4 Special Issues and Topics

3.2.4.1 Use of Micro-computer Software for Monitoring of Loan Recovery

The presentation on the topic was made by Mr. F. Jepsen of DANIDA and the session was chaired by Ms. Janice C. Hilay, Landbank of the Philippines.

Mr. Jepsen introduced the micro-computer software which had been developed by him for the FAO Fishery Industries Division, and which was meant to facilitate monitoring of loan repayment in fisheries lending.

He explained that the software was based on the Statistical Analysis System (SAS) software package which is one of the most common software packages used for statistical analysis. This software formed the basis for a special menu-driven software which can be used to identify in any on-going lending programme for the fisheries sector the factors which influence loan repayment. These factors are identified at three different levels, viz. the level of the personal characteristics of the individual borrower, such as household characteristics, ownership of assets, vocational qualifications and experiences, collateral, etc.; the level and type of economic activity carried out with the help of the loan as well as loan particulars, e.g. type of fixed assets financed, equity contribution etc.; and the level of the bank branch from which the borrower received the loan, such as percentage of fisheries lending in relation to total lending, frequency of field visits by bank staff.

Mr. Jepsen explained that the necessary inputs which are required to carry out the analysis are limited to monthly information from a sample of branches on a sample of their borrowers regarding loan repayment and regarding branch characteristics, the former usually contained in the loan documentation available in the branch.

Mr. Jepsen highlighted the advantage of the software as improving cost efficiency and effectiveness of lending operations by enabling management to quickly identify problems in on-going lending programmes to the fisheries sector and taking corrective action by modifying lending programmes, repayment schedules, procedures for loan application and their appraisal, etc. Mr. Jepsen also mentioned that the software can be easily modified to suit the needs of lending programmes of other sectors.

In the discussion following Mr. Jepsen's presentation, several financial institutions expressed a strong interest in using the software on a pilot basis and requested FAO's and DANIDA's technical support.

3.2.4.2 Presentation of Fisheries Development Projects

FAO Bay of Bengal Programme for Fisheries Management and Development (BOBP)

The presentation on the topic was made by Dr. K.C. Chong, Programme Coordinator, Bay of Bengal Programme, FAO, and the session was chaired by Mr. A. Sarath de Silva, Bank of Ceylon.

Dr. Chong gave an overview of the FAO Bay of Bengal Programme for Fisheries Management and Development (BOBP). The programme, which had started in 1979 as a regional project in the Bay of Bengal area, had been funded by a variety of donors and initially focused on development of small-scale marine capture fisheries and brackishwater aquaculture as well as on assisting governments and NGOs in designing and introducing extension services and other educational and socio-economic services and facilities which would enhance the standard of living of small-scale fishing communities in the countries bordering the Bay of Bengal. Special emphasis was placed on enhancing the socio-economic role of women in fishing communities.

Dr. Chong went on to explain the objectives and activities of the present and third phase of BOBP which focuses on community-based fisheries management and on assisting governments in the countries participating in BOBP, i.e. India, Sri Lanka, Maldives, Bangladesh, Thailand, Malaysia and Indonesia to introduce community-based fisheries management in support of environmentally friendly and sustainable fisheries development.

Dr. Chong concluded his presentation with an overview of BOBP's on-going and planned activities in the various countries of the region.

ODA (Overseas Development Administration) Post-Harvest Project

Mr. King described in his presentation the project's experiences in the areas of credit and marketing. The ODA Post-Harvest Project is based in Madras, India, and operates in the four states on the eastern coast of India. The project's focus is on small-scale fisherfolk.

The objectives of the project were described as: to strengthen the effectiveness of the fishing communities, NGOs and government agencies and to develop needs related skills; to increase the ability of the target group and development agencies to address post-harvest issues through a better understanding of technical and marketing issues; and to strengthen

the ability of development agencies to assist the target group in community issues related to post-harvest issues.

Mr. King then explained the project's involvement in credit/thrift programmes with the need to provide credit for consumption needs and to build up a savings record in order to be able to access institutional credit. The experiences of the project in this area suggest that one cannot replace moneylenders and the informal sector but should aim at an expansion of choice.

The presentation was made by Mr. D. King, ODA, and the session was chaired by Ms. Janice C. Hilay, Landbank of the Philippines.

GTZ Assisted People's Development Fund

The presentation was made by Miss Rose Ann M. Baylon and Miss Aireen L. Macasara, GTZ, and chaired by Mr. Mohd. Shukree Bin Md. Zain, Bank Pertanian Malaysia (BPM).

It was explained that the People's Development Fund (PDF) was implemented as a pilot project in cooperation with the Cebu Upland Project, the Mindanao Development Bank and the project "Linking bank and self-help groups" of the Land Bank of the Philippines. Its objective was to assist rural communities in their area of operation in establishing savings and credit groups and linking these to financial institutions.

The activities of the project in the field of savings' mobilization and lending were described and it was pointed out that PDF, as in any pilot project, was still learning which scheme worked and which did not.

Concluding the presentation, it was pointed out that PDF has recently been registered with the Cooperative Development Authority and that in accordance with its legal status, there was a need to formalize the administrative procedures of the fund. Even though PDF was only in its first phase of implementation, the presenters expressed confidence that the experiences of PDF were replicable in other areas.

3.2.4.3 Aquaculture

Status of the Aquaculture Industry in the Philippines

The presentation was made by Mr. F.R. Gonzales, Chamber of Fisheries and Aquatic Resources of the Philippines, and chaired by Mr. M.T. Bahrtiya, National Bank for Agriculture and Rural Development (NABARD), India.

Mr. Gonzales gave a comprehensive overview of the status of the aquaculture industry in the Philippines and also identified major problems as well as possible solutions. He commenced his presentation with a statistical profile of the industry, which was followed by a description of the species cultured and highlighted the latest trends. Mr. Gonzales also identified bottlenecks with regard to credit support and administrative arrangements. Pertinent statistics and background material were distributed among the participants.

In the second part of his presentation, Mr. Gonzales highlighted the role and participation of the private sector in the promotion of trade and investment in the fisheries sector of the Philippines. A variety of specific recommendations had been made by the private fisheries sector in the Philippines for the future development of the fisheries sector to be acted upon by the government.

Marketing of Aquaculture Produce in India

The paper entitled "The marketing of aquaculture produce - emerging opportunities for the fishery industry in India" was presented by Dr. N.B. Shete, Professor, Development Banking, National Institute of Bank Management, India. The session was chaired by Ms. Janice C. Hilay, Landbank of the Philippines.

Dr. Shete gave an overview of the development of aquaculture in India including the marketing of aquaculture products. He then made a number of proposals as to which role the aquaculture industry in India should play in accelerating aquaculture development for domestic consumption as well as for export.

Dr. Shete concluded his presentation by highlighting that in addition to commercial considerations, objectives such as food supply and generation of income and employment should not be forgotten.

4. RECOMMENDATIONS FOR FOLLOW-UP ACTION

Towards the end of the consultations, working groups were formed which prepared recommendations for follow-up activities. The proposed follow-up activities were divided into regional and national activities.

The recommendations were then agreed on in plenary as follows:

REGIONAL ACTIVITIES

1. Establishment of Fishery Credit Support Services Unit at ACS and Start of Operations

1.1 Activities:

- Establishment of roster of experts in fisheries investment/credit; fisheries management, marketing utilization; aquaculture; fish capture
- Documentation of publications on fisheries investment and credit programmes
- Establishment of data base on on-going fishery credit and investment programme
- Publication of bulletin
- Liaison with donors
- Coordination of ACS fishery credit activities

1.2 Inputs:

ACS: counterpart staff/fishery credit assistant, secretarial support, office accommodation

FAO: consultant

2. Conduct of Regional Workshop on Insurance for Aquaculture and Capture Fisheries

2.1 Activities:

- Preparation and conduct of workshop
- Publication of report
- Consideration of insurance schemes in credit programmes

2.2 Inputs:

Japan/FAO: funding of travel and subsistence allowance for participants and of conduct of workshop

ACS members: participation in and follow-up to workshop

3. Exploration of Possibilities of Participation of APRACA Members in INFOFISH COMMON FUND Project for Promotion of Value-Added Shrimp Products

3.1 Activities:

- Dissemination through ACS of draft project document and identification of APRACA members' interest in participation in project
- Consolidation of comments by ACS and submission to INFOFISH

3.2 Inputs:

INFOFISH: cost of sending pertinent communications and documentation to ACS

ACS: cost of dissemination of documents to APRACA members, consolidation of their comments and conveying them to INFOFISH

4. Participation of APRACA Member Institutions in Revolving Fund for Small-Scale Fisheries Management and Development of FAO Bay of Bengal Programme

NATIONAL ACTIVITIES

1. Establishment of Fishery Investment Support Unit at Bank of Ceylon

1.1 Activity:

Design of unit, training of staff, supply of equipment, commencement of operations

1.2 Inputs:

Bank of Ceylon: staff, office facilities and supplies

FAO: technical assistance and advice, training, equipment

2. Use of Micro-computer Software for Monitoring of Loan Recovery in Fishery Credit Operations by People's Bank, Sri Lanka

2.1 Activities:

- Training of bank personnel
- Adaptation of software to needs of People's Bank
- Conduct of pilot application of software

2.2 Inputs:

People's Bank of Sri Lanka: staff, office supplies

FAO/DANIDA: technical assistance and advice, training, equipment

3. Use of Micro-Computer Software by Landbank of the Philippines

3.1 Activities:

- Training of bank personnel
- Adaptation of software to needs of Landbank
- Pilot application of software

3.2 Inputs:

Landbank of the Philippines: staff, office supplies

FAO/DANIDA: technical assistance and advice, training, equipment

4. Use of Micro-computer Software by Bank Indonesia

4.1 Activities:

- Training of bank personnel
- Adaptation of software to needs of Bank Indonesia
- Pilot application of software

4.2 Inputs:

Bank Indonesia: staff, office supplies

FAO/DANIDA: technical assistance and advice, training, equipment

5. Demonstration of Innovative Utilization and Marketing of Cultured Carp

5.1 Activities:

- Demonstration of innovative utilization and marketing of cultured carp
- Preparation of feasibility studies
- Preparation of credit schemes in support of innovative utilization and marketing of cultured carp

5.2 Inputs:

NABARD: staff and office facilities, funds

FAO: technical assistance and advice, training, equipment

B.6 Establishment of Pilot Fish Processing Plant at Fishing Community Level to be operated by Fisherwomen in Malaysia

6.1 Activities:

- Design of plant
- Establishment of plant
- Conduct of pilot-commercial operations
- Preparation of feasibility study and credit schemes

6.2 Inputs:

BPM: staff, office facilities, funds for credit operations

FAO: technical advice, training, equipment

7. Establishment of Pilot Fish Processing Plant at Community Level to be operated by Fisherwomen in Indonesia

7.1 Activities:

- Design of plant
- Establishment of plant
- Conduct of pilot-commercial operations
- Preparation of feasibility study and credit schemes

7.2 Inputs:

DOF/BI: staff, office facilities, funds for credit operations

FAO: technical advice, training, equipment.

PROGRAMME

Monday, 3 July

REGISTRATION AND OPENING

- 09.00-10.00 Registration of participants
- 10.00-10.30 Welcome address - Mr. Antonio T. Hernandez, Senior Vice President, Land Bank of the Philippines
- Welcome address - Mr. Zulkifili Mohd Noor, Secretary General, APRACA Secretariat
- Inaugural address - Mr. Mukhlis Rasyid, Managing Director, Bank Indonesia, Chairman, Board of Supervisors of APRACA Consultancy Services
- Welcome address - Dr. U. Tietze, Fishery Industry Officer, FAO, Rome

10.30-10.45 Group photo

10.45-11.00 Tea break

INTRODUCTION

- 11.00-11.30 Introduction to consultation and organizational arrangements - Mr. B.P. Shresta, Managing Director, APRACA and Mrs. Erlinda G. Lagmay, Managing Director, APRACA CENTRAB
- 11.30-12.30 Recent trends and changes in fisheries investment and credit - Dr. U. Tietze, FAO, Rome
(Chair: Mr. A.B.M. Mahbubul Amin Khan, Deputy Governor, Bangladesh Bank)
- 12.30-14.00 Lunch break

FISH MARKETING AND UTILIZATION PRESENTATIONS AND DISCUSSIONS

- 14.00-15.30 Future availability of fishery products for human consumption in Asia - Dr. E. Ruckes, Senior Fishery Industry Officer, FAO, Rome
(Chair: Mr. A. Sarath de Silva, Deputy General Manager, Bank of Ceylon)
- 15.30-15.45 Tea break
- 15.45-16.45 Investment requirements for fish marketing and utilization and related infrastructure in Asia - Dr. S. Subasinghe, Technical Adviser, INFOFISH
(Chair: Mr. A. Sarath de Silva, Deputy General Manager, Bank of Ceylon)
- 16.45-17.30 Institutional credit for fish marketing and utilization and related infrastructure in Indonesia - Mr. S. Jambunan, Chief, Sub Directorate of Small-Scale Fisheries, Directorate General of Fisheries, Indonesia
(Chair: Mr. A. Sarath de Silva, Deputy General Manager, Bank of Ceylon)
- 17.30-18.30 The FAO Bay of Bengal Programme for Fisheries Management and Development (BOBP) - Dr. K.C. Chong, BOBP Programme Coordinator (FAO)
(Chair: Mr. A. Sarath de Silva, Deputy Manager, Bank of Ceylon)
- Tuesday, 4 July
- 09.00-09.45 Role of INFOFISH with regard to appraisal and monitoring of investment projects - Dr. S. Subasinghe, Technical Adviser, INFOFISH
(Chair: Mr. Syahoul Bahroen, Manager, Bank Indonesia)
- 09.45-10.30 The Development Bank of the Philippines' experience in financing the fisheries sector - Ms Rose May R. Ala, Division Chief, Development Bank of the Philippines
(Chair: Mr. Syahoul Bahroen, Manager, Bank Indonesia)
- 10.30-10.45 Tea break
- 10.45-11.45 The Philippine Crop Insurance Corporation Fisheries Sector Programme Credit Guarantee Scheme - Mr. Manuel F. Aranza, Department Manager, Philippines Crop Insurance Corporation
(Chair: Mr. Syahoul Bahroen, Manager, Bank Indonesia)

- 11.45-12.30 Institutional credit for fish marketing/utilization and related infrastructure in Sri Lanka - Mr. Asaka de Silva, Deputy General Manager, People's Bank, Sri Lanka
(Chair: Mr. Syahoul Bahroen, Manager, Bank Indonesia)
- 12.30-14.45 Lunch break
- 14.00-14.45 The marketing of aquaculture produce - emerging opportunities for the fishery industry in India - Dr. N.B. Shete, Professor, Development Banking, National Institute of Bank Management, India
(Chair: Ms. Janice C. Hilay, Bank Executive Officer, Landbank of the Philippines)
- 14.45-15.30 Institutional credit for sustainable fish marketing/utilization, capture and management in India - Mr. M.T. Bhartiya, Assistant General Manager, NARBARD, India
(Chair: Ms. Janice C. Hilay, Bank Executive Officer, Landbank of the Philippines)
- 15.30-15.45 Tea break
- 15.45-17.00 Credit assistance to fisherfolk cooperatives: the Landbank experience - Mr. Antonio T. Hernandez, Senior Vice President, Landbank of the Philippines
(Chair: Ms. Janice C. Hilay, Bank Executive Officer, Landbank of the Philippines)
- 17.00-17.30 Presentation on fishery post-harvest project of ODA - Mr. Duncan King, Project Field Manager, Overseas Development Administration (ODA), UK
(Chair: Ms. Janice C. Hilay, Bank Executive Officer, Landbank of the Philippines)

Wednesday, 5 July

- 09.00-10.45 Institutional credit for production, capture and marketing of fish, shrimp and other aquatic resources in Bangladesh - Mr. A.B.M. Mahbubul Amin Khan, Deputy Governor, Bangladesh Bank
(Chair: Mr. M.T. Bhartiya, Assistant General Manager, NABARD)
- 10.45-12.30 Tea break

11.00-12.30 Status of the aquaculture industry - problems and prospects - Mr. Felix R. Gonzales, Secretary General, Chamber of Fisheries and Aquaculture Resources of the Philippines
(Chair: Mr. M.T. Bahrtiya, Assistant General Manager, NABARD)

12.30-13.30 Lunch break

Afternoon Visit to fish processing plant

Thursday, 6 July

09.00-09.30 Institutional credit for fish marketing and related infrastructure in Malaysia - Mr. Hashim B. Mohammad, Manager, Bank Pertanian Malaysia
(Chair: Mr. Mohd Shukree Bin Md. Zain, Branch Manager, Bank Pertanian Malaysia)

COMMUNITY-BASED FISHERIES MANAGEMENT PRESENTATIONS AND DISCUSSIONS

09.30-10.30 Community-based coastal fisheries management in Asia and the Pacific - Dr. M. Hotta, FAO, Rome
(Chair: Mr. Mohd Shukree Bin Md. Zain, Branch Manager, Bank Pertanian Malaysia)

10.30-10.45 Tea break

10.45-11.30 Fisheries management measures in developed countries - Dr. M. Hotta, FAO, Rome
(Chair: Mr. Mohd Shukree Bin Md. Zain, Branch Manager, Bank Pertanian Malaysia)

11.30-12.30 Adaptation of national credit programmes to fishery management requirements - a case study from Sri Lanka - Dr. U. Tietze, FAO, Rome, and Mr. A. Sarath de Silva, Deputy General Manager, Bank of Ceylon
(Chair: Mr. Mohd Shukree Bin Md. Zain, Branch Manager, Bank Pertanian Malaysia)

12.30-13.00 The GTZ-assisted People's Development Fund (PDF) in Baljoon, Cebu, Philippines - Miss Rose Ann M. Baylon and Miss Aileen L. Macasara, GTZ Philippines
(Chair: Mr. Mohd Shukree Bin Md. Zain, Branch Manager, Bank Pertanian Malaysia)

- 13.00-14.00 Lunch break
- 14.00-15.00 The role of women in fish processing and marketing in Asia - Ms. Anselma S. Legaspi, Division Chief, Bureau of Fisheries and Aquatic Resources, Philippines
(Chair: Ms. Janice C. Hilay, Bank Executive Officer, Landbank of the Philippines)
- 15.00-16.00 Use of microcomputer software for monitoring loan recovery - Mr. F. Jepsen, Chief Adviser, DANIDA
(Chair: Ms. Janice C. Hilay, Bank Executive Officer, Landbank of the Philippines)
- 16.00-16.15 Tea break
- 16.15-17.00 Plenary session for preparation of follow-up action plan
(Chair: Ms. Janice C. Hilay, Landbank of the Philippines)
- 17.00-20.00 Working groups for preparation of action plan
- Friday, 7 July
- 09.00-10.45 Discussion and adoption of working group recommendations for follow-up action plan
(Chair: Ms. Janice C. Hilay, Bank Executive Officer, Landbank of the Philippines)
- 10.45-12.00 Tea break
- CLOSING SESSION
- 12.00-12.45 Addresses by:
- Dr. M. Hotta, FAO
 - General Arcadio s. Lozada (ret.), Office of the Present of the Philippines
 - Mr. Bishnu Shresta, ACS
 - Mr. F. Jepsen, DANIDA
 - Mr. A.B.M. Mahbubal, Bangladesh Bank on behalf of participants

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APPENDIX III

SELECTED PAPERS PRESENTED AT CONSULTATION

FUTURE AVAILABILITY OF FISHERY PRODUCTS FOR HUMAN CONSUMPTION IN ASIA

by

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Summary

The paper reviews recent trends in the consumption and trade of fishery products in Asian countries and attempts to assess the prospects for the availability of fishery products for human consumption in the future. The potential for additional supplies from marine and freshwater resources as well as from culture operations are discussed. The importance of reducing waste and increasing efficiency in handling, processing and marketing operations are highlighted.

1. INTRODUCTION

One of the first initiatives taken up by APRACA, INFOFISH and FAO after the Consultation on the Establishment of a Fisheries Credit Network for Asia and the Pacific held in Jakarta in October 1993 was the study of investment opportunities in fish processing and marketing facilities. This study and the results which have become available so far will be presented later in this Regional Consultation. However, in order to provide a perspective for those who may not be so closely associated with the realities of the fisheries sector in the countries concerned, this paper intends to provide an analytical overview of the current trends in fish production and consumption in the Asian region. It is probably well known that on a global scale there is excessive capacity for harvesting fish which is in sharp contrast with the post-harvest sector where both physical and economic waste are frequently found facts. Therefore, the paper looks specifically at the demand and consumption side and the potential for additional supplies that may become available through improvements in fish utilization. At the same time, the findings should lend an additional argument in favour of credit services for the post-harvest sector. Obviously, the future supply situation is a critical factor in the evaluation of the merits of investment opportunities. Facilities which have to be closed down due to lack of raw material are unlikely to generate the income needed for repayment of loans.

Three major production systems are to be taken into account: marine, inland or freshwater, and both freshwater aquaculture and mariculture. In 1992, Asian countries (excluding the former USSR) caught 36.1 million t from marine areas (total world 82.5 million t; 44 percent) and 11.7 million t from inland waters (total world 15.6 million t; 75 percent). These figures show a significant increase over the results of 1986 which were 32.9 million t for marine catch and

7.9 million t for inland waters. These figures include the aquaculture production. Of the total world aquaculture production in 1992, 4.9 million t or 35 percent originated from the marine environment and 9.1 million t from inland areas. Asian countries contributed 84 percent, or 11.7 million t. The latter figure compares to 5.2 million t in 1984 and the respective values were US\$ 7 000 million in 1984 rising to almost US\$ 22 000 million in 1992.

An unquantifiable, but known to be substantial, amount of fish is lost as discarded by-catch or due to insufficient preservation and marketing arrangements. Avoidance of these losses, therefore, could make a significant contribution to protein supplies in the countries concerned. Apart from the physical losses, economic losses have to be taken into account which occur in terms of prices being lower than necessary due to lower grade quality and product deterioration.

The paper concentrates on Southeast Asian countries and provides cross references to other Asian countries. Southeast Asia is the region with the highest *per caput* fish consumption in Asia with an average of almost 24 kg in 1989/90 compared to 4-5 kg for Northeast and South Asia and 9.4 kg for China. The latter's total fish supply is, however, with 10.5 million t live weight, slightly higher than the total for the Southeast Asian countries. The analysis is complemented by a brief overview of the global picture, particularly international markets, and concludes with an outlook for the availability of fishery products for human consumption in the future.

2. UTILIZATION AND DEMAND

Patterns of fish utilization vary from country to country in Southeast Asia depending on the structure of their fishing industries and the overall demand for fish. However, most of the fish in this region is marketed fresh or cured. Fresh fish marketing is more important and curing proportionally less important than in South Asia, probably as a result of a greater local demand for fresh fish and the availability of more infrastructure for chilling and transporting fish. The more developed Southeast Asian nations use little or no fish for curing. Among Southeast Asia's high income earners are those who live in metropolitan areas such as Kuala Lumpur, Manila, Singapore, Jakarta, Bangkok, Hongkong, etc. Their high income levels have created a niche market for live seafood (fish, crustaceans, shellfish, etc.) in their respective countries. Only Thailand freezes and reduces a significant quantity of fishery products because of the existence of a large trawl fishery which produces both shrimp for export and lower grade fish for reduction. About 33 percent of Thailand's catch is used for reduction, while 22 percent is frozen. China, Thailand, Indonesia and Vietnam are among the Southeast Asian nations that use fish for canning.

The people of this region have a traditional liking for seafood and high rates of *per caput* fish consumption and with the exception of Indonesia, they consume more than 20 kg *per caput* per year (in live weight equivalent), with Singapore consuming 50.3 kg. The demand for fish in the region was 8.2 million t in 1990 and is currently estimated to be 12.35 million t (1995). Current estimates of available fishery resources indicate that this demand can be met from local catches and increased aquaculture production which still leaves room for some export of fishery products. In order to accomplish this, currently less favoured species must be harvested and marketing strategies for unfamiliar products must be developed along with improvements in handling, processing and distribution. The expanded availability of ice making, cold storage and transport facilities would make a crucial difference, but significant improvements could also be achieved through intermediate technology. Likewise, demand for fishery products is expected to grow at the usual rapid growth rate. If new marine stocks are exploited and traditional ones properly managed, and if adequate attention is given to developing fisheries and aquaculture in inland and brackish waters, the region's fishery resources appear sufficient to meet the expected demand well beyond the year 2010. In

order to realize this potential, however, major efforts will be required to develop and manage the fishery resources for sustainable full exploitation and to reduce post-harvest losses and utilize unconventional species for human consumption.

The Southeast Asian region markets most of its fish catches in either fresh or cured forms as well as processed forms of fish sauce or paste (utilizing freshwater fish as raw material) resulting in a minimum level of waste and virtually 100 percent utilization of all fish. However, as far as marine fish are concerned, large losses owing to spoilage are known to occur in this area.

3. TRADE IN FISHERY PRODUCTS

The export of fishery products in order to earn foreign exchange is considered one of the major goals of fisheries development in most Southeast Asian countries. Nonetheless, a number of Southeast Asian nations have become heavy importers of fish, and recent changes in fisheries jurisdictions are profoundly affecting trade relationships in these products.

Southeast Asian nations, as a whole, are net exporters of fishery products. In 1993, the total value of their exports amounted to US\$ 9 437 million and the net value was US\$ 5 653 million. Thailand, Taiwan (Province of China), Indonesia, Hong Kong, Singapore, the Philippines and Malaysia are the major fish exporting countries in the region. The majority of these countries are net exporters in terms of value, but Malaysia imports a large amount of low-priced fishery products and hence is a net importer in terms of quantity. Viet Nam's export trade in fishery products has significantly increased (i.e., of the 1 097 830 t of total fish production in 1992, 81 020 t of finished products amounting to US\$ 305 630 000 were exported, which took third place as the country's top export earners behind oil and rice). Hong Kong, Singapore and the Philippines export considerable amounts of fish, but their imports exceed exports in both value and quantity. Thailand, Hong Kong, Taiwan (Province of China) and Singapore play unique roles in the fisheries trade of Southeast Asia: with affluent populations and high rates of fish consumption, they provide attractive markets for fish produced by other countries both within and outside the region, and as the key commercial centres in Southeast Asia they serve as transshipment sites where fishery products are imported, stored and/or processed and then exported to Japan, the USA, Europe and other lucrative markets.

Tuna and shrimp are the main exports of the region and are exported mainly to Japan. Thailand exports large quantities of fresh or frozen fish to Malaysia in addition to exporting shrimp and cuttlefish mainly to Japan. Thailand has become the world's leading tuna processing centre and in 1993 it also became the world's leading exporter of fish and fishery products displacing the USA.

Southeast Asian countries realize substantial economic benefits from the export of fishery products. In 1993, fishery exports from countries in the region totalled about US\$ 9 437 million compared to the value of imported fish and fishery products which amounted to US\$ 3 784 million. However, several factors are changing the context of world fisheries trade. The foremost of these is the emergence of new jurisdictional claims (EEZ declarations and the management of fisheries in the high seas). As a result of these developments distant water fishing nations will suffer. On the other hand, many developing coastal states will be in a much stronger position to influence the trade flow of fish, and sources of fishery products for the major fish consuming countries will become more diversified as a result of these changes. Japan, the most important fish-consuming country, will have to depend more on imports, thus offering expanded trade opportunities for the proximate developing coastal states in the Southeast Asian region.

Another factor which may affect fisheries trade, especially in the long-term, is the full exploitation of a growing number of stocks for which there is a strong export market. Many stocks of the high value species, particularly shrimp and tuna, are already being exploited at or beyond optimum levels. Further increases in fisheries production within the region will have to rely partly on less popular species, which may have limited commercial value on export markets, as well as on domestic markets. The effect of this is difficult to predict. It is possible that exportable products will be developed from these species, based on the wide array of fish processing techniques presently available.

The economic benefits of exporting fishery products must be weighed against the need for fish to meet domestic demand. There is evidence that this is being done in at least some countries in the region. The recent developments effected by UNCLOS, UNCED and about to be effected by the UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks will improve the ability of most developing coastal states in determining for themselves the best uses to which their fishery resources are put.

4. ISSUES IN FUTURE FISHERIES DEVELOPMENT

4.1 Resource Availability

Most opportunities for expanding marine fisheries production in the region lay in the exploitation of currently less favoured and less valuable species. Stocks of the high-value species such as shrimp and tuna are, with a few exceptions, already harvested at or beyond optimum levels. As fishing efforts intensify, as they are sure to do, to meet rising demand, management of fisheries to maintain optimum yields and to avoid depletion of stocks will become more and more critical.

Countries in Southeast Asia have given increasing attention to aquaculture and inland fisheries, partly due to the growing awareness of problems in the marine fisheries sector, such as depletion of the more valuable stocks, the rising cost of fuel and the declaration of EEZs. Inland fisheries are also encountering problems such as pollution and damming of rivers, but there is still substantial scope for their expansion, and opportunities for the control and enhancement of fish production are greater in the inland than in the marine sector. Aquaculture also presents major development possibilities because of the extensive inland and brackish water available. Production from marine fisheries has already levelled off, and further increases in *fish availability (and production)* will be possible *principally* through the development of aquaculture and the seeding and management of natural bodies of water. In the long-term, therefore, the relative contribution of aquaculture and inland fisheries to national, regional and global fish production can be expected to increase substantially way beyond its present levels. Nonetheless, because of the magnitude of available resources, marine fisheries will probably continue to supply the bulk - perhaps 70 percent or more - of aquatic protein for human consumption in the foreseeable future. Development efforts in fish production must devote continuing attention to marine fisheries, with increasing emphasis on management and the maintenance of optimum yields, while at the same time expanding assistance in inland fisheries and aquaculture.

4.2 Appropriate Technology

Along with the production of more food, the potential benefits of fisheries development include improved income and employment opportunities, often for the poorer sectors of the economy. In the developing countries of Southeast Asia, these sectors are usually characterized by a surplus of labour, limited skills in modern technology, and a lack of capital. To assure benefits to the poor,

fisheries projects must incorporate technologies which not only result in increased production but also make use of the large human resources of the region as far as possible and involve inputs which are available in the region and are relatively cheap.

The technology must also be appropriate to the level of skills available in the project area. The particular technologies which satisfy these criteria will vary with the situation; in most Southeast Asian countries, appropriate technologies are kept simple, labour-intensive and use only limited amounts of fossil fuel. Examples of appropriate technologies include the icing, salting and drying of fish instead of freezing, the use of small rather than large vessels and engines, and the use of locally available rather than imported ingredients for fish feeds. Some fishery resources may be available only through the use of more sophisticated and capital-intensive gear, as in the case of certain tuna stocks; in these instances, the overall economic and social benefits of developing the fishery, when weighed against the costs, may or may not justify investment. Each case must be analyzed on an individual basis, but in general the thrust of development assistance in the fisheries sector should emphasize simple technologies which employ relatively large numbers of people and utilize inexpensive inputs.

Fisheries are usually considered as a means of producing protein food, but fishery products are often viewed more in terms of the foreign exchange which might be earned through their export. Balancing these two uses may appear problematic, since most Southeast Asian countries require both increased protein for their people and an improved balance of trade. In practice, market forces usually dictate the end use of a product and, in most cases, it is obvious whether a particular product will be exported or consumed domestically. The demand for certain fishery products among the developed countries - especially Japan, the European countries and the USA - is so strong that the local effective demand cannot compete.

4.3 Small-scale versus Commercial Fisheries

The fisheries of Southeast Asia may be viewed as comprising of three sectors: small-scale, medium-scale commercial and commercial. The small-scale sector is made up of traditional coastal fisheries, characterized by small vessels (often un-motorized), simple gear, rudimentary or no processing, and consumption by the fishermen's household or sales to a local (village) market. The medium-scale commercial sector is labour intensive, mostly composed of vessels in the 12-16 m range, motorized, with a winch-head possibly accompanied by a hand-operated reel for rope or net and a large crew (often 10-18 persons). The catches of the medium-scale commercial vessels are generated for either domestic consumption or for export. The commercial sector is heavily capitalized and involves large vessels, sophisticated gear and infrastructure facilities, and sales through commercial channels (often to export markets). Development assistance in fisheries has supported both sectors, but emphasis on small-scale fishermen is increasing and is based on the premise that development of labour-intensive, low-technology fisheries carries broader social and nutritional benefits for the poorer sectors of developing countries, and on the recognition that the small-scale sector is in greater need of assistance. The development of small-scale fisheries and aquaculture is also ideally suited as a component of integrated rural development projects. In addition, there are some coastal and inland resources which can be exploited only by small-scale techniques. Continued emphasis on the small-scale sector continues in all Southeast Asian countries and the major challenge before development in this sector is to increase efficiency while retaining the labour-intensive nature of the enterprise. In the small-scale sector especially, the importance of designing comprehensive integrated projects encompassing activities from fishing to marketing and infrastructure is paramount.

4.4 The Role of Local Institutions

Effective local institutions are crucial to the successful implementation of fisheries development policies and programmes. As the principal focus of fisheries development investment is increased fish production in most Southeast Asian nations, the role of the private sector will continue to be dominant. Finding the most effective institutional framework for assisting individual fishermen and fish farmers who are owner-operators of their vessels and fish farms is a major challenge facing fisheries development planners. In this regard, local development banks and other local financial intermediaries have an important role to play in providing infrastructure facilities such as landing jetties for fishermen and transport infrastructure to aquaculture areas. Government fisheries departments can also make a major contribution to fisheries development by improving extension services as a means of transferring improved technologies to fishermen or fish farmers *and convincing fishing communities to take their responsibilities in fisheries management in their area.*

Cooperatives are, in principle, an important institutional vehicle through which small-scale fisheries and aquaculture can be promoted. Past experience suggests, however, that they can be a successful instrument of fisheries development. However, cooperatives considered more successful are those that have developed as a result of following participatory approaches where the members' real interests and not the government's have been the driving force and agenda. Projects formulated and implemented with the expectation of leaving behind a well-functioning and sustainable cooperative organization have seldom produced satisfactory results. Government involvement and meddling with grassroots cooperatives is one of the most quoted reasons for cooperative failure.

The role of commercial fisheries corporations, whether owned by governments, local private interests or foreign companies, will continue to be important, especially in the development of the more distant-water, commercial fisheries. Such organizations can be important vehicles for development if they are well organized and managed. However, in view of the inefficiency that frequently occurs in government corporations in both developed and developing countries, private sector involvement in the ownership and/or management of such corporations may be an important factor in their success.

5. CHINA

In the article "China develops new fish marketing system" published in the issue 2/95 of INFOFISH International, Cui Lifeng highlights the following major changes:

- Co-existence of multi-channel distribution and decentralized management. The distribution system diversified from the earlier monopoly of the state owned fishery commercial enterprises to a marketing system with four main channels which now achieved the following market shares, by quantity and (value):

. State-owned fishery commercial enterprises	21% (26)
. Collective/cooperative fishery commercial enterprises	4% (3)
. Non-fishery commercial enterprises	18% (17)
. Individual traders and fishers	57% (54)
- Production growth.

The better care for quality of the products marketed, their specifications and the wide range of prices have stimulated production and supplies to meet the specific demands of different types of consumers and the economic benefit for producers and traders increased

considerably. The fishery labour force increased from 5.95 million in 1985 to 9.66 million in 1992 and their average income more than doubled to RMB 3 704.

- Infrastructure development
Over 150 wholesale markets for fishery products have been established up to now and the state-owned fish supply and distribution enterprises were reorganized for competing in the market place and with their own responsibility for profits and losses. New forms of enterprises and of their cooperation have evolved, leading to a strengthening of fishermen's individual capacity and market competition. It is said that the new system contributes to the conservation and management of fishery resources. Despite this progress, further development of infrastructure is needed to adequately satisfy the requirements; the marketing information system is still weak and must be improved.

In concluding, the article lists the following recommendations for action:

- Construction of wholesale fish markets;
- Establishment of a nationwide fish marketing information system;
- Formulation of laws and regulations regulating/standardizing fish marketing activities;
- Training and strengthening the capabilities of personnel in fish marketing operations and management.

6. WORLD FISH PRODUCTION

Before looking in some detail at the development of fish production and trade during the last 10 years, a short summary of what has happened in the 25 years between 1960 and 1984 should provide a helpful indication of the drastic changes in world fisheries in the second half of this century. Total world fish catch increased from 39.5 million t in 1960 to 84 million t in 1984. Many major stocks peaked and suffered heavy declines during that period; just to remind us of a few examples: anchovy in Peru and Chile; Atlantic herring and Atlantic cod. Alaska pollack became the most important fish species caught worldwide. Shrimp catches increased from 400 000 t to 1.9 million t; cephalopods from 700 000 t to 1.6 million t and tuna from 1.1 million t to 3.1 million t. This was also the period of the booming expansion of frozen products.

Concomitant with world fish production, international trade in fishery products expanded from 4.5 million t to 11.9 million t or in value terms from US\$ 1 300 million to US\$ 16 600 million. Fresh and frozen crustaceans expanded their market share from 13 percent to 33 percent, whereas the canned and cured fish trade shrank from 25 to 13 percent and 14 to 6 percent respectively. It was also the time when the world market for fishery products developed its principle areas with the EU, Japan and USA. Globally, and in general terms, there were three main fish trade flows: one from the developing world to the developed for high priced species such as shrimp and tuna, and for low-valued products such as fishmeal; one from developed countries to developing, mainly low-priced products such as canned mackerel or canned sardines from Japan, fresh/frozen mackerel from the UK, cured fish from Scandinavian countries or Canada, and direct landings by the fleet of the USSR. The third major trade flow was and is among developed countries. Trade among developing countries was and continues to be relatively small, although there are noticeable changes.

Table 1 provides an overview of world fish production and trade between 1987 and 1993. With regard to fish production it may be noted that a peak was reached in 1989 and that total world fish production stayed at comparable levels during the last five years for which figures are available.

In contrast to the development of catch volumes - values would be very difficult to compute due to the variety of factors involved and their actual dimensions - the value of world trade shows very significant increases, whether expressed as exports or imports. It is of interest to point out some asymmetric development in fish production and international trade: in 1990 and 1991 trade expanded in an order of magnitude of around 10 percent in value whereas the growth rates for the quantities produced were negative. It would require further study to identify the connection, to see whether there were time lags involved and which/why, or whether the composition of trade flows changed with an increased participation of higher value products, or perhaps even a combination of these. It is also noticeable that in the years of the peak catch (1989 and 1993) the growth rates of trade were particularly low.

Table 1

World Fish Production and Trade

		1987	1988	1989	1990	1991	1992	1993
World fish production	million t	94.4	99.0	100.2	97.4	97.0	98.1	101.4
Growth over previous year	%	1.7	4.7	1.2	-2.8	-0.4	1.1	2.6
Exports of fishery products	'000 million US\$	27.9	31.8	32.2	35.8	38.9	40.3	41.2
Growth over previous year	%	21.8	13.9	1.2	11.2	8.8	3.6	2.2
Developed countries	'000 million US\$	15.3	17.3	17.2	20.2	21.2	21.8	21.1
Growth over previous year	%	21.8	12.8	0.2	17.1	5.3	2.9	-3.4
Developing countries	'000 million US\$	12.6	14.5	14.8	15.6	17.7	18.5	20.1
Growth over previous year	%	21.8	15.3	2.1	5.3	13.3	4.3	8.7
Imports of fishery products	'000 million US\$	30.5	35.3	35.9	39.6	43.7	45.5	44.6
Growth over previous year	%	25.7	15.7	1.7	10.3	10.3	4.1	-1.7
Developed countries	'000 million US\$	26.8	30.6	30.8	34.4	37.4	38.7	38.0
Growth over previous year	%	26.5	14.2	0.6	11.7	8.6	3.4	-1.9
Developing countries	'000 million US\$	3.7	4.7	5.0	5.2	6.2	6.8	6.7
Growth over previous year	%	20.1	26.8	7.7	2.6	19.2	8.7	-0.3
Developing countries' surplus exports over imports	'000 million US\$	8.9	9.8	9.8	10.4	11.5	11.7	13.4
Growth over previous year	%	21.9	10.1	0	6.1	10.6	1.7	13.8
Developed countries' net imports	'000 million US\$	11.5	13.4	13.6	14.2	16.2	16.9	16.9
Growth over previous year	%	33.7	16.5	1.5	4.4	14.1	4.3	-0.1

7. MAJOR COMMODITIES

Major commodities traded internationally are shrimp, tuna, groundfish, small pelagic species, cephalopods, and fishmeal. Since a fair number of specific studies on these commodities have been prepared over time, published by FAO, INFOFISH and specialized trade magazines, a brief summary description of market development will be sufficient.

7.1 Shrimp

Dramatic reports about the reduction in China's shrimp production overshadowed the market in 1993. The drop in China's shrimp culturing was put at 85 percent by traders, though a 65 percent drop seemed more realistic. As a result there was a ready market for white shrimp from Southeast Asia. Black tiger production did not grow, as Indonesia continued to have disease problems. As for wild shrimp, the coldwater shrimp catch was expected to increase somewhat in 1993 over the 1992 level. Production of wild shrimp from tropical waters was expected to be maintained. However, overall shrimp production was estimated to be 50 000-100 000 t below the 1992 level.

Shrimp production in 1994 is estimated to have exceeded the 1993 low, though staying below the 1992 figure. Countries reporting lower shrimp output in 1994 than in 1993 were: Ecuador, Indonesia (problems with pollution in shrimp farms), Norway (lower catch) and the USA. On the positive side were Thailand (now the top shrimp farming country), Mexico (recovery of the wild shrimp catch combined with expansion in aquaculture output), India and Viet Nam (boom in the shrimp culture industry).

Domestic shrimp landings in the USA were again depressed, and most of the increased demand was met by import expansion. Supplies from Asia expanded in 1993, replacing those from Latin America. The EU market was generally static in 1993 as recession overshadowed business. However, in the closing months of the year there were timid signs of expansion. Prices in Europe moved up for tropical shrimp, especially for black tiger, but coldwater shrimp was in ample supply and prices tended to decrease.

In 1993 the aquaculture industry seemed to have reached a point of stability or even decline after years of outstanding growth. The major producing countries reached their peak production level, and most of them moved into decline. Countries like Ecuador and Thailand were expected to maintain production, while output in other countries, including China, Indonesia and the Philippines, was likely to contract further. In this climate shortages will continue. The shortage of Chinese shrimp would benefit black tiger producers, especially in Thailand where no disease problems had been experienced.

The strong Japanese market, combined with the high value of the Japanese Yen, had its impact on shrimp prices worldwide. Shrimp prices - expressed in US dollars - have increased since the beginning of 1994 by 10-20 percent. Compared to a year earlier, the price increase was even higher, sometimes exceeding 50 percent. While the Japanese market was reportedly strong and actively buying despite the high prices, the USA and the EU were characterized by slow demand.

7.2 Tuna

Tuna catches continued to be depressed in all the main fishing areas and prices moved upwards in 1993. Italian canneries paid US\$ 1 400/t for yellowfin at the end of 1993, which was 40 percent up on the year. Thai canneries too faced a 40 percent price increase for their raw material over the year and skipjack reached US\$ 1 000/t in late 1993. Canners started to pass on these price increases to their clients. Yet after the years of relatively low and stable prices for canned tuna, consumers were reluctant to pay more. Future price developments strongly depend on the outcome of discussions between the Mexican tuna industry and authorities in the USA. If the import ban on tuna caught in the Central Eastern Pacific were to be removed, prices would probably go down again.

The limited availability of yellowfin from the Indian Ocean continued, leading to further increases of prices of raw material for canneries. In Italy, prices of large yellowfin reached US\$ 1 400/t in June 1994. This is the highest level in recent history, and 40 percent ahead of the last year's price.

Tuna catches were very disappointing in 1994, with the Western Pacific as the only exception. Shortage of the tuna raw material continued to overshadow the market, and prices went up strongly. The only exception to the general trend of higher prices was the US market, where cannery owners are more and more involved in catching activities as well, and can thus keep down the price of the raw material.

7.3 Cephalopods

The most valuable species in the cephalopod group, the octopus, had a rest period in the Central Eastern Atlantic in October 1993. This followed a glut earlier in the year and a meeting of the main octopus producing countries where certain stock protection measures and a unified count system were agreed. Squid prices in Europe continued to decline as those for Thai products were undermined by increased imports from India. The Indian product played an important role on the French market, while Italy's importers still preferred Thai squid. In contrast, cuttlefish was scarce all through the year and prices moved upwards.

The traditional exporters of squid reported lower catches in 1994, while some newcomers influence the market. Squid prices stayed high. In the last quarter of 1994, trade was depressed on the Italian market as a result of the cholera scare. Octopus prices went up during the closed season in the Las Palmas area. Cuttlefish prices, too, moved upward in the last quarter of the year. This is the first time in recent years that prices of all three species of the cephalopod family went up at the same time.

7.4 Groundfish

Sales of groundfish in the USA expanded in the summer and autumn of 1993 but remained very sensitive to prices. The groundfish block market in the USA was depressed and cod block prices declined towards the end of 1993. In contrast, Alaska pollack was scarce as fishing stopped in many areas and prices went up. Earlier in 1993, huge quantities of Alaska pollack from the Russian fleet had arrived in the USA swamping the market.

The groundfish market in Europe experienced major problems in spring 1994 when prices collapsed due to excessive imports and domestic catches. In the closing months of 1994, the supply situation normalized leading to a price increase for all major products. Consumer resistance was felt in the USA, and to a lesser extent in Europe. Further price increases are likely as Alaska pollack will be in short supply in the coming months. Cod prices in Europe went up in the closing months of the year, following lower supplies.

Surimi prices on the European market experienced a strong increase in December 1994, going up to US\$ 3.00/kg from a low of US\$ 2.40/kg touched in mid-1994. Demand is very good at the moment, and supply is less than usual.

7.5 Fishmeal and Oil

The major fishmeal exporting countries reported a 3.4 million t production in 1994, but well ahead of the five-year average. Very high catches by Peruvian vessels led to a substantial increase in the

country's fishmeal output. Chile, too, reported higher fishmeal production in 1994. Competitive fishmeal prices prompted higher consumption especially in North America and Europe.

In 1994, fish oil production was high in all major producing countries with the exception of Japan and Iceland. Fish oil prices moved upwards in the closing months of the year in response to large price increases of vegetable oils. Peru and Chile were dominating fish oil production and exports. In both countries production increased by more than 50 percent. Fish oil production by Scandinavian countries was stable in 1994, as a decline in Icelandic output was balanced by higher fish oil production in Denmark.

8. THE RESULTS OF THE GATT URUGUAY ROUND

Initially, the aim of the tariff negotiations was a reduction of the tariff rates on industrial products, which includes fish and fishery products, by at least the same amount as was aimed for in the Tokyo Round, that is by one-third. It is estimated that the actual reductions will be in the order of 39-41 percent on average. Preliminary estimates made by the GATT secretariat (December 1993) suggested that imports of fish and fishery products subject to tariff rates over 15 percent would decrease from 7 to 3 percent of total trade; those subject to rates of between 10.1 and 25 percent would decrease from 18 to 9 percent, whereas tariff rates of between 5.1 and 10 percent would apply to 23 percent of the trade instead of 18 percent. Products subject to a nil rate would increase from 21 percent of total imports to 23 percent. The bulk of the imports, 45 percent, would be paying between 0.1 and 5 percent, up from 42 percent of imports prior to the Uruguay Round.

Trade in fish and fishery products will also be affected by some of the individual agreements negotiated or renegotiated in the context of the Uruguay Round and which will be part of the World Trade Organization's (WTO) responsibility, such as the Agreement on Sanitary and Phito-sanitary Regulations, the Agreement on Technical Barriers of Trade, the Anti-dumping, Subsidy and Safeguards Codes as well as the new dispute settlement rules.

9. ENVIRONMENTAL CONCERNS AND TRADE

The tuna/dolphin and shrimp/turtle cases are highlights of clashes between environmental and trade interests and since they have been widely publicized there is no need to dwell on them here. Several developments were triggered off in response to these and other cases which have moved environmental concerns to the forefront. These include the:

- Cancún Conference on Responsible Fishing and the Declaration
- UNCED Agenda 21 with reference to trade, sustainable development and fisheries in its chapters 2, 14 and 17 respectively
- Environment and Trade Committee in OECD and its series of meetings
- Elaboration of a Code of Conduct for Responsible Fisheries by FAO
- Establishment of a Committee on Trade and Environment in the World Trade Organization
- UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks
- International Conference on the Contribution of Fisheries to Food Security.

The Cancún Conference was organized in May 1992 by Mexico in cooperation with FAO and its Declaration requested FAO to elaborate a Code of Conduct for Responsible Fisheries and conveyed a message to UNCED in the sense that environmental concerns should not be used as justification for limiting exports of fishery products from developing countries.

Chapter 2 of the UNCED Agenda 21 stipulates that trade and environment be made mutually supportive. Work towards the implementation of Agenda 21 was given a push by the CSD (Commission on Sustainable Development) at its meeting in May 1994. A reporting process has been initiated within the UN system to prepare for decisions on action at the CSD meeting in April 1995.

OECD (also UNCTAD and UNEP) have been organizing and continue to organize meetings related to questions of environment and trade. One of the sectors studied is fisheries. Judging the written material available, the results are not very important as far as fisheries is concerned.

The Code of Conduct for Responsible Fisheries will contain an article on post-harvest practices and trade where reference is made to environmental considerations.

The UN Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks will hold its last round of deliberations in August 1995.

An International Conference on the Contribution of Fisheries to Food Security will be organized by Japan in cooperation with FAO, somehow following the example of the Cancún Conference. It will take place in Kyoto, Japan in December 1995. When proposing the conference at the Fourth Session of the COFI Sub-Committee on Fish Trade in October 1993, the Japanese delegate stated that it would discuss *inter alia*, the sustainability of resources in the context of marine ecosystems, species utilization, international trade and shed more light on resource management methods, and would include representation by all relevant parties.

As Secretary of the COFI Sub-Committee on Fish Trade, I may add that it can be anticipated that issues of trade and environment will be on the agenda for the Sub-Committee's fifth meeting which will take place in June 1996 in Bremen, Germany.

10. OUTLOOK

10.1 Overall Assessment of Production Prospects

Past estimates of the annual potential supply of fish from all sources have ranged from 100 to 120 million t. It is now evident that the marine capture fisheries are adversely affected at extraction levels beyond about 80 million t. Inland capture fisheries yield is about 6 million t, of which Asia produces half, and the overwhelming constraints to further increases in production rest with the appropriate allocation of water rights and water quality.

Aquaculture, although recording a remarkable growth over the period 1984-90, has experienced significant problems in saturation of markets and consequent price reductions as well as environmental and disease setbacks. These, however, are expected to be only temporary and characteristic of a growing industry. The major constraint would appear to be the restricted knowledge of the requirements for growing only a relatively few species. Most notable is that finfish farming has mostly occurred for freshwater herbivore species (7.4 million t) with only a modest contribution from marine species (1 million t). The further expansion of finfish supplies from freshwater aquaculture is likely to be constrained by the freshwater environment. By contrast, the marine environment offers far better prospects for production growth, provided technology can overcome difficulties in locating pens and cages further offshore. With the exception of molluscs, carps and tilapia, the growing of fish in captivity is still in its infancy and can be compared with early attempts at animal husbandry and the domestication of wild animals.

The greatest prospects for increasing fish supplies for food are to be found in the use of small shoaling pelagics for direct human consumption. Presently these species are used for producing fishmeal, for pig and poultry production as well as aquaculture. The feed specifications for aquaculture now demand a level of quality of meal that requires an upgrading in the method of harvest, which, in itself, would result in an increase in the price of the species used, and a consequent increase in feed costs for aquaculture. The implication, however, of increases in the price of low-valued species is the adverse effect on both the poorer segments of populations as well as on marginally viable fish farmers. However, the quality requirement for the aquaculture feed would also be sufficiently high for direct human consumption and, in time, might be sufficient to generate developments in alternative feed sources.

The remaining option for increases in fish supplies would be that the present condition of overfishing prevails and that the majority of the marine catch increases would come from fishing further and further down the "food chain". The end limit, as has occurred in one or two areas, is a fishery that is almost entirely a "trash" fishery of mixed juveniles and other small-sized species for direct feed to grow several preferred species. That is to say, the wild production from the marine areas could end up being nearly all utilized to grow two or three species in captivity. The impact would be the loss of the present wide spectrum of food items that the existing 1 000 commercial species now provide, to be replaced by very few species providing only differences in flesh, colour and texture.

Estimates of potential from mariculture are precarious to make at this juncture with only a short time series of production showing a spectacular increase. However, there are projections of 500 000 t of farmed salmon production by 2000 and these may be projected to 2010 by a further doubling. Shrimp farming produced 700 000 t in 1991 and has been projected to expand at a reduced rate, estimated at 1 million t by 2000 as a result of constraints in expertise, pollution, disease, infrastructure and market fluctuations. Any projections for farmed fish will be determined by demand pull and the price relationship between capture fish and other food products.

10.2 Implications for Consumption

The constraints limiting increases in production of fish will put severe strains on the nutritional situation of the countries and population groups with high dependence on fish for their protein supplies and on small-scale fisheries for employment and income. Such impacts would be the greatest in East and South Asia where an additional 8.5 million t will be required by the year 2010 to maintain the present levels of consumption. This region contains a number of countries where fish plays a vital role in the diet (e.g., Bangladesh, China, Indonesia, Myanmar, the Philippines, Sri Lanka, Thailand), in all of which fish accounts for a half or more of the animal protein supplies.

The consequence of a shortfall in supply will be increases in the price of fish. Such increases by themselves will further stimulate aquaculture production and provide the incentive for further technological advances. Increased prices will also mean that consumer demand will switch to lower priced substitutes. Many of the presently preferred species will move to "the luxury food" class but it is expected that the broad range in fishery products that has been the characteristic of fisheries will remain, thereby providing fish at an array of prices. This has been the experience of the past whereby lobsters, shrimps, crabs, salmon, flatfish and cephalopods have had a relatively inelastic demand. By contrast, demand for cods, hakes, haddocks, tunas, mackerels, redfishes, jacks, mullets and Alaska pollack is generally much more responsive to price changes.

Projections would indicate that a number of the species with elastic demand would shift to those groups having an inelastic demand. The substitution effect would draw on these less-preferred species. In the same way, species formerly used for fishmeal would gradually be expected to enter the elastic part of the food fish demand. The overall consequence would be that the existing supplies of low-value fish that are important to the poorer sections of the population would be removed from within their purchasing power. This is already occurring in some regions as the result of increased demand for fishmeal and consequent increases in price.

Currently, almost 30 percent of total world catch of fish is used for non-food purposes. Most of this is reduced to fishmeal which is used in combination with other ingredients such as soybean meal and skimmed milk powder, in the preparation of protein feeds for animals, in particular poultry, pigs, and, increasingly, high-value cultivated fish such as salmon and shrimp. While in the past the most important consumers of fishmeal have been the developed countries, their apparent consumption has increased only moderately or declined. Several developing countries have become increasingly important in the 1980s. In all cases, the rapid growth in fishmeal use has been associated with rapid expansion of aquaculture.

Although fishmeal is also derived from sources other than the small shoaling pelagic species (trash fish as by-catch of trawling, refuse from processed food fish, and even, in the case of China, mussel culture), the bulk comes from fish caught specifically for the purpose of reduction to meal. The demand for fishmeal is dependent in part on demand for protein feeds, although the share of fishmeal in these feeds can vary considerably with its price relative to the prices of fishmeal substitutes (e.g., soybean, coarse grains). In recent years, fishmeal has tended to establish itself as an essential element in feed compounds due to growth factors such as its immunological effects and the price competition of substitutes has become less critical. A continuation is foreseen of the high demand for special quality fishmeal for aquaculture purposes. Anticipated demand for shrimps and salmons will have to be met by the aquaculture output because their wild stocks are currently fished at maximum levels. New opportunities may be generated for special quality fishmeal. The industry forecasts indicate that in the next decade the share of prime fishmeal would increase from the present 8 percent to 25 percent of the total fishmeal production. However, there are serious limitations to the expansion of the world reduction industry because most stocks of fish used as raw material are highly variable and the resource situation seems likely to prevent substantial increases in production.

Table 2

Characteristics of Major Market Segments for Fishery Products

Market	Types of Species	Sources	Prices (ex-vessel)	Implications
Luxury	Salmon, shrimp, sea bream, etc.	Capture and culture	\$3-4/kg. Tending to decline with increased cultivation.	Increased trade from culture countries. Increased demand for fishmeal. Conflicts over space and water use.
	Flatfishes (flounders, soles, plaice, etc.)	Capture	\$3-4/kg. Increasing due to depletion of stocks	Most stocks heavily overfished. Incentive for culture.
	Tunas	Capture	\$1.50-2.00/kg. Reaching limit because of substitutes (e.g., chicken)	High consumption in developed countries. Increased processing in, and exports from, developing countries.
	Crabs and lobsters	Capture and production of substitutes from low-priced fish through surimi process.	\$3-12/kg. Tending to decline with production of substitutes.	
	Molluscs (oysters, clams, cockles, mussels).	Mostly culture, some capture.	\$1-5/kg. May decline for cockles & mussels with increased culture.	Opportunities for increased production and consumption in developing countries. Sanitation problems.
	Cephalopods (squids, octopus and cuttlefish).	Capture	\$1-4/kg. Likely increases over the long run.	Opportunities for increased capture by some developing states and for increased exports. Healthy food merits.
Standard	Most finfish species making up the bulk of the market (cods, hakes, haddocks, jacks, mackerels, groupers, croakers, etc.)	Capture	\$0.50-3.00/kg. Increasing due to depletion of stocks.	Generally heavily overfished with declining total catches and decline in size of animals.
Low-income	Carps, catfish, milkfish, etc.	Culture	\$0.20-1.00/kg	Heavy production in Asia, mostly China. Very little in Africa and Latin America.
	Artisanal-caught marine and lake fish (sardines, mullets, sea breams, chub mackerels, etc.)	Capture from canoes, rafts and other small craft, generally non-powered.	\$0.20-1.00/kg. Rising prices due to depletion.	Generally heavily overfished with declining total catches and decline in size of animals.
	Frozen blocks of low-quality fish of miscellaneous species.	Capture by industrial vessels of former USSR.	Under \$1/kg.	Sold to local African coastal states for various reasons. Not likely to continue for long.
	Trawler by-catch (small individuals including juveniles of high-valued species).	Discards from shrimp trawling operations.	\$0.05-0.50/kg. Prices increasing as discards sought for feed to use in aquaculture.	Locally an important source of protein for low-income consumers.
Non-Food Markets	Small shoaling pelagics (anchovies, pilchards, sardines, etc.) reduced to fish meal and oil, mostly for feed.	Capture mostly by large-scale operations.	\$0.10-0.40/kg. Price increases presently limited by price of substitutes for feed (e.g., soybeans)	Conversion to food use possible in future but stocks not found in Asian waters where future need greatest.

INVESTMENT REQUIREMENTS FOR FISH MARKETING/UTILIZATION AND
RELATED INFRASTRUCTURE IN ASIA

by

Dr S.Subasinghe*

Expansion of industrial fisheries has resulted in an almost threefold increase in global fish production over the past 30 years, from around 35 million MT to around 100 million MT by 1993. This is mainly attributed to the rapid expansion of the fleet of large factory vessels since the mid-50s as well as the introduction of new, highly efficient pelagic fishing techniques such as mechanised purse-seining. There have been parallel developments in the Asia-Pacific region as well. The demand-driven expansion of fisheries has undoubtedly put pressure on fishery resources in many countries in the region as evidenced by the almost stagnant production levels. Destructive and poorly managed fisheries have resulted in the dwindling of marine resources, driving the countries towards increased dependence on aquaculture.

With most established fisheries in the Asian region showing limited prospects for further expansion, there is very limited scope for any significant expansion in the catch sector. In the face of the failure of fish production to satisfy the growing demand of the consumer populations in the region and the growing processing industry, the importance of placing high priority on the better use of existing resources can not be over emphasised.

Fish is a highly perishable commodity. On a global basis an estimated 10 percent of all fish landed is lost before reaching the consumer. In some Asian countries such losses have been estimated at 20 percent. Reducing post-harvest losses and maintaining the quality of fish landed will require investment in better equipped vessels, installing insulated ice/fish holds onboard, improved facilities for landing, storage and distribution of catch. Most developing countries need additional investment to improve marketing infrastructure and other essential facilities at landing complexes and harbours to facilitate proper handling and storage of fish e.g. electricity, supply of good quality water, adequate supply of ice, cold room/freezing facilities, waste disposal facilities etc.

In most countries in the Asian region a very high percentage of fish landed is consumed locally, in the fresh form. Quality of fresh fish in most domestic markets in the region is far from satisfactory. Poor onboard practices, poor infrastructure facilities and handling and storage practices are often cited as causes for the low quality of fish in many domestic markets.

Scope for private sector investment in infrastructure development is limited. Many governments, even though aware of the need for investment in such facilities, lack adequate financial resources to improve and maintain such common facilities. Poor quality limits the use of fish for further processing, depriving the producer of a chance to get better income for his produce. On the other hand it also restricts the export potential of landings, either in the fresh form or processed, the countries losing valuable foreign exchange as a result.

In spite of these limitations, industries in many Asian countries have shown significant progress in both domestic and export oriented processing and marketing sectors (Table 1). In fact it is in areas such as processing, preserving and packaging, distribution and marketing that significant industry gains can be made. In many markets consumers are increasingly becoming aware of quality as evidenced by the rise in the demand for quality fish and fishery products. Hence it has become necessary for all sectors of the industry, from the producer to the processor, to cater for the varied needs of the present day discerning consumer. Industries in Asia, still largely product driven, must hence become more market oriented and be prepared to innovate if it is to confront changing demands in both the export and domestic markets. Among other things, such action needs additional investment in industry, by way of improved facilities.

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Table 1

a) EXPORTS AND IMPORTS AS A PERCENTAGE OF GROSS FISH SUPPLY AND b) UNIT VALUE OF EXPORTS AND IMPORTS, IN SEVERAL MAJOR EXPORTING COUNTRIES IN THE ASIA-PACIFIC REGION - 1991

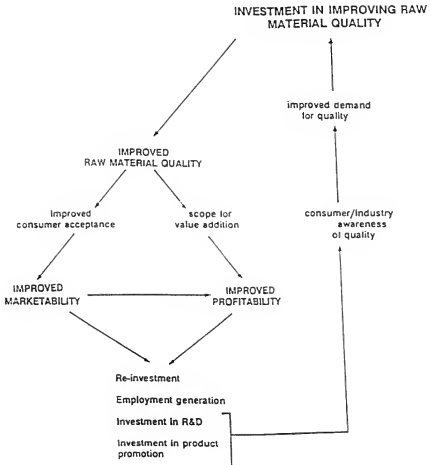
A = Exports as a percentage of gross supply
B = Net domestic supply as a percentage of gross supply

Country	Landings (MT)	Imports (MT)	Exports (MT)	A	B	Unit Value of	
						Imports \$/KG	Exports \$/KG
Bangladesh	892 700	-	30 000	3.4	96.7	-	6.0
China	13 134 967	783 698	380 198	2.7	97.3	0.6	3.1
Hongkong	230 910	360 154	272 116	46.0	54.0	3.4	2.4
India	4 036 931	-	162 671	4.0	96.0	-	3.5
Indonesia	3 186 000	70 679	426 137	13.1	86.9	0.7	2.8
Malaysia	620 000	243 474	164 738	19.1	80.9	0.7	1.6
Maldives	80 713	-	27 777	34.4	65.6	-	1.3
Myanmar	769 236	-	17 500	2.3	97.7	-	1.5
Pakistan	515 497	-	52 677	10.2	89.8	-	2.1
Philippines	2 311 797	192 162	111 601	4.5	95.5	0.5	4.2
Singapore	13 054	209 321	151 501	68.0	32.0	2.2	3.3
Sri Lanka	198 063	57 661	2 270	0.8	99.2	0.9	10.5
Thailand	3 065 170	717 087	913 772	24.2	75.8	1.5	3.2
Vietnam	877 000	-	29 453	3.4	96.6	-	3.8

Recent developments in fish marketing and trade, both at national and global level, point to the need for a fresh evaluation of the investment needs of the industry. Investment in the fisheries sector has a strong relationship to raw material/product quality and the subsequent marketability of the product and its profitability (Figure 1). Mindful of these benefits, increased emphasis is laid by most industries on quality. Improved marketability, and room for value addition created as a result of better quality of raw material is an important aspect of the growth of the industry. Such developments are often accompanied by employment generation, investment in areas such as research and development, product promotion and also in re-investment. These in turn creates a demand for quality products.

As in industrialised countries, in Asian countries too, consumers are increasingly becoming aware of quality as evidenced by the rise in the demand for quality fish and fishery products. Hence it has become necessary for all sectors of the industry, from the producer to the processor, to cater for these needs. Governments can play a vital role in this respect, by encouraging investment in both the production and processing/marketing sectors. However, processing would not automatically assure a market for the product. The process should take care of an existing market or should create a new market.

RELATIONSHIP BETWEEN QUALITY, MARKETABILITY,
PROFITABILITY & INVESTMENT



Most Asian nations are definitely in an advantageous position as far as raw material availability and labour costs are concerned. They have a satisfactory supply of relatively cheap, good quality raw material and a reliable, low-cost labour force. A recent survey carried out in four leading seafood exporting countries in the region has shown that relatively high-value species such as shrimp, lobster, cephalopods, tuna, etc account for about 15-20 per cent of the total landings in these countries. If the Asian countries are to benefit from the above advantages, they have to establish themselves as reliable suppliers of good quality raw material and products. Continuity of supply, efficient delivery and price stability are other important criteria.

Most Asian countries need investment to improve infrastructure facilities at landing sites. Scope for private sector investment in infrastructure development is limited, and it is difficult, if not almost impossible, to meet all the national needs through private sector investment. Many governments, even though aware of the need for investment in such facilities, lack adequate financial resources to improve and maintain such common facilities.

Poor quality limits the marketability of fish both in the domestic and export market. With increasing quality awareness among consumers, most domestic markets too have become more quality oriented. Poor quality of raw material also limits its use for further processing, depriving the producer of a better price for his produce. On the other hand it also restricts the export potential, either in the fresh form or processed, with the countries losing valuable foreign exchange as a result. Entry into lucrative markets in the industrialised countries is becoming increasingly competitive. These countries have stringent quality standards and health regulations. A perception of poor quality can have serious economic consequences for trade often resulting in significantly lower prices.

Another area which warrants increased investment in the Asian exporting countries is production of value-added products, an activity which could improve and enhance earnings, from their fisheries. Even now many exporters in the region are actively involved in this area. Even though such processes need additional capital investment by way of equipment, the improved economic returns often more than compensates the investment. A wide range of value-added shrimp, cephalopod and tuna products are already being marketed by many Asian countries. The degree of value addition can vary from a simple process of presenting a product in an attractive packaging to fairly high technology processing and packaging. IQF freezing of shrimp and manufacture of surimi and surimi based products are two areas which has shown remarkable growth in many Asian countries over the last few years.

Investment in better, appropriate packaging is another area which has to be addressed by the region. Appropriate and acceptable processing and packaging can boost both the domestic as well as export marketability of products bringing in increased earnings while helping to expand trade, provide domestic employment and build skill levels. On the other hand meeting the challenge of expanded international trade requires decisive action on the part of fishery industries not only to cater to the market requirements of the importing countries but also to promote the best possible environment for cooperation between suppliers and foreign buyers.

Capital investment for fish processing can vary widely depending on the process and technologies involved, degree of automation, packaging and presentation, etc. (Tables 2 and 3). Processing of products by traditional methods is low investment-oriented. Traditional dried, boiled, smoked and fermented products have a significant share in most domestic markets. However, if these products are meant for modern retail markets and export they have to be processed and packed according to the market requirements. This may require the use of drying/smoking kilns, modern heating and cooking equipment, packaging equipment, extensive quality control and quality assurance systems, sophisticated marketing channels, etc. On the other hand processes such as canning, freezing, IQF freezing and preparation of speciality comminuted products such as surimi need high capital.

Table 2: Approximate Equipment and Machinery Costs for Different Product Lines
Product Type

Product Type	Approximate Cost			
	Low <US\$5 000 50% Annual Dep.	Medium US\$5-20 000 35% Annual Dep.	High US\$20-100 000 15% Annual Dep.	Very High >US\$100 000 15% Annual Dep.
Live	+	+	+	
Dried/Boiled	+	+		
Smoked	+	+	+	
Fermented	+	+		
Comminuted		+	+	+
Frozen			+	+
Canned			+	+
Others	+	+		
Fishmeal	+	+	+	+

Table 3: Approximate Cost of Major Machinery and Equipment Employed in Fish Distribution and Marketing Systems

Item	Approximate Capacity	Approximate Price (US\$)
Ice plant - block	10 MT/day	65 000
	50 MT/day	180 000
	25 MT/day	150 000
	35 MT/day	210 000
Cold room	30 MT	30 000
	100 MT	55 000
Plate freezer	0.5 MT/batch	85 000
	1.0 MT/batch	125 000
Air blast freezer	1.0 MT/batch	50 000
	1.5 MT/batch	65 000
IQF Freezer (Cryogenic)	250 Kg/hour	50 000
	700 Kg/hour	100 000
IQF belt freezer (Mechanical)	250 Kg/hour	150 000
	1.0 MT/hour	500 000
Reefer Truck	5.0 MT	35-55 000

It is interesting to note that in Thailand and to some extent in Indonesia and Philippines, entry of medium to large scale modern processing facilities has clearly negatively affected new investment in labour intensive traditional industries. This is evident by the declining trend in terms of the number of establishments processing traditional fishery products in these countries. It appears that these labour intensive industries are losing ground in their competition with more sophisticated products and processing methods. However, this should not be interpreted as a decline in the popularity of traditional products among the consumers. In fact, while enjoying a steady market in many countries surveyed, exports of traditional products from the region have shown a steady increase over the last few years. Investments in modernisation of plants involved in the production of traditional products is important if the countries are to expand their export of such products to ethnic markets abroad.

Results of a survey undertaken FAO/INFOFISH to identify specific investment requirements in fish processing and marketing in five Asian countries is given in Appendix 1.

Appendix 1

SURVEY ON FISH MARKETING EQUIPMENTS AND INFRASTRUCTURE WITH RELATED INVESTMENT REQUIREMENTS

The present study is an attempt to identify basic investment needs of five countries in the Asian region, namely Indonesia, Malaysia, Philippines, Sri Lanka and Thailand, in fish processing and marketing equipment and in infrastructure facilities. This group of countries comprise some major fish producers in the region, producing a total of 9.4 million MT of fish annually, almost 10 percent of the total global production (Table 1).

Table 1: Fish Landings by Major Group of Species, 1991 (MT)

Group	Indonesia	Malaysia	Philippines	Sri Lanka	Thailand
Carp and barbs	171 860	4 999	16 319	-	54 230
Tilapia 65 150	1 144	96 330	23 832	53 370	
Catfishes, snakeheads & gourami	137 610	198	19 419	-	91 630
Other freshwater fishes	154 750	8 000	19 050	-	57 065
River eels	1 610	-	506	-	-
Milkfish, giant sea perch	164 430	10 844	241 043	-	-
Snappers, groupers, croakers, pony fishes, sea catfishes	227 690	72 270	341 387	8 658	120 110
Scads, carrangids, mullets, pomfret	460 350	72 630	438 987	8 975	134 810
Sardinella sp & anchovies	422 040	34 310	291 457	33 426	272 560
Tuna, Spanish Mackerel and tuna-like species	436 205	47 438	363 885	40 595	190 340
Indian mackerels and hairtails	173 570	48 670	101 225	12 000	153 890
Sharks, skates and rays	79 800	11 510	19 049	18 360	11 780
Miscellaneous marine fishes 270 430	153 606	11 421	45 987	1 236 858	
Freshwater prawns, shrimps and other crustaceans	8 150	135	8 892	-	7 700
Crabs and lobsters	13 360	4 530	18 656	1 100	46 900
Prawns and shrimps	259 160	71 340	84 870	4 865	247 870
Other marine crustaceans	11 460	2 940	-	-	-
Blood cockles, clams, oysters, shrimps, etc.	37 960	48 525	151 907	-	205 900
Squids and octopuses	18 740	18 250	33 086	200	148 630
Sea cucumber, jelly fishes	9 480	8 170	3 605	65	15 600
Other miscellaneous species	5 090	490	192 347	-	4 927
Total	3 185 000	620 000	2 311 797	198 063	3 085 170

Source: FAO

INDONESIA

In 1991, marine landings accounted for over 75 percent of the fish production of Indonesia followed by aquaculture (15 percent) and inland fisheries (9 percent) (Table 2). Nearly 12 percent of the landings were exported (Table 3). The net domestic supply amounted to nearly 87 percent of the gross supply. Major items of export were fresh, chilled or frozen fish mainly consisting of shrimp, tuna and other finfish species, which accounted for nearly 74 percent of exports by volume. Other items of export included canned fish (12 percent), cured and fermented products (7 percent) and dried/salted/smoked products (5 percent) (Table 4). More than half of the production was marketed in the fresh form while over 30 percent was used in the production of cured products (Tables 5 & 6).

Java island is the largest domestic market for fisheries products in Indonesia with nearly two thirds of the national population. However, it produces only 30 percent of the country's total fish production and hence has to depend largely on imports, mainly consisting of dried, salted and smoked fish, from other islands. The main supplies of fresh fish to large urban markets in Java are mostly generated by marine landings and aquaculture facilities located along the Northern Java coast.

Nearly a quarter of the total of over 3 million MT fish landed in Indonesia consists of relatively high value species such as shrimp, tuna, lobster and a variety of other finfish species with good export potential. The industry is served by nearly 400 ice plants with a total production capacity of 7 000 MT per day. However, most of the ice plants are located in urban areas with most of the production going to non-fisheries uses. There are only 30 ice plants located in fishing ports throughout Indonesia. The total production capacity of these plants is around 500 MT per day (Table 7), or approximately 150 000 MT annually at full production, a quantity which is completely inadequate to cater for the needs of an industry which produces over twenty times that amount of fish. In spite of the effort taken by the Directorate General of Fisheries (DGF) to encourage use of ice, the unavailability of an adequate supply and the relatively high cost of ice reaching the fisherman appear to be serious problems faced by the industry. It has been reported that due to the high cost of distribution, the cost of ice reaching the fisherman is almost double the ex-factory price.

Table 2: Indonesia, Malaysia, Philippines, Sri Lanka and Thailand: Production by Sub-Sector, 1991 (MT)

Country	Marine		Inland		Aquaculture		Total
Indonesia	2 537 612	(76%)	294 477	(9%)	517 512	(15%)	3 349 601
Malaysia	904 631	(93%)	2 858	(0.5%)	62 304	(6%)	969 793
Philippines	1 673 339	(64%)	233 241	(9%)	692 401	(27%)	2 598 981
Sri Lanka *	174 231	(88%)	22 632	(11%)	1 200	(0.5%)	198 063
Thailand	2 478 607	(83%)	136 000	(5%)	353 124	(12%)	2 967 731

Source: Fishery Statistical Bulletin for the South China Sea Area, SEAFDEC

* Ministry of Fisheries, Sri Lanka

In keeping with the expansion of export markets for tuna and shrimp, there has been a rapid increase in freezing and cold storage facilities. In 1991, 159 freezing plants with a total daily production capacity of around 1 050 MT of frozen product, and a total cold room capacity of 36 600 MT, were operating in Indonesia. Nearly 60 percent of them were located in Java. As a result of the slump in shrimp production in the past two years, the utilisation capacity of these facilities, which were mainly used for processing shrimp for export, now stands around 60 percent.

Table 3: Fish Production, Exports and Domestic Marketing, 1991 (MT)

Country	Production	Exports		Domestic	
		MT	(%)	MT	(%)
Indonesia	3 349 601	409 034	(12%)	2 940 558	(88%)
Malaysia	969 793	175 216	(18%)	794 577	(82%)
Philippines	2 598 981	144 939	(6%)	2 454 042	(94%)
Sri Lanka *	198 063	2 270	(1%)	195 793	(99%)
Thailand	2 967 731	1 087 395	(37%)	1 880 336	(63%)

Source: Fishery Statistical Bulletin for the South China Sea Area 1991, SEAFDEC

* Ministry of Fisheries, Sri Lanka

Table 4: Indonesia, Malaysia, Philippines, Sri Lanka and Thailand: Exports by Fishery
Commodity, 1991 (MT)

Commodity	Indonesia	Malaysia	Philippines	Thailand	Sri Lanka *
Fresh, chilled or frozen					
- tunas	62 307	11 820	5 113	2 540	573
- other finfishes	146 192	32 514	6 225	234 449	
- shrimp and lobsters	90 556	15 860	30 092	121 241	1 572
- crabs	4 505	133	750	380	
- squid, cuttlefish and octopus	433	18 064	214	62 460	
Sub-total	303 993	78 391	42 394	421 070	2 145
(%) (74)	(45)	(29)	(38)	(95)	
Dried, salted/smoked					
- fish	5 842	1 741	721	22 547	100
- shrimp and lobster	4 489	1 869	690	2 748	
- squid, cuttlefish and octopus	183	145	8 179	2 765	
Fish sauce, paste, etc	4 220	7 063	1 847	17 372	
Molluscs - fresh, frozen, dried or salted	6 355	43 554	1 148	4 618	
Sub-total	21 087	54 372	12 585	50 050	100
(%) (5.2)	(31)	(8.7)	(4.6)	(4.4)	
Fish products in					
- airtight containers	44 308	12 662	49 207	515 041	4
- non airtight containers	708	10 037	-	42 455	
Sub-total	45 016	22 699	49 207	557 496	4
(%) (11.7)	(13)	(34)	(51.3)		
Live fish	788	5 613	1 036	1 896	-
Fishmeal	1 607	8 782	28	40 390	21
Others	35 552	5 359	39 689	16 493	-
Total 409 043	175 216	144 939	1 087 395	2 270	

Sources: Fishery Statistical Bulletin for the South China Sea Area, SEAFDEC

* FAO Yearbook

Table 5: Indonesia, Malaysia & Thailand - Fish Disposition Data (1992)

() indicates the percentage

Type	Indonesia	Malaysia	Thailand*
Fresh	1 530 336 (51)	619 590 (81)	597 178 (19)
Frozen	151 135 (5)	6 808 (1)	527 925 (17)
Canning	21 508 (1)	- (-)	775 808 (24)
Cured	1 088 389 (36)	54 206 (7)	162 620 (5)
Fish meal	27 444 (1)	49 540 (6)	1 115 298 (35)
Others	174 147 (6)	37 388 (5)	14 439 (-)
Total	2 992 959	767 542	3 193 268

Source: DGF, Indonesia, and Department of Fisheries, Malaysia
Department of Fisheries, Thailand (* 1991 data)

Table 6: Indonesia - Production and Disposition Data on an Area Basis (1992)

Area/Province	Fresh	Dried/Boiled salted	Frozen	Others
Sumatra	519 843 (60%)	254 506 (29%) 27 863 (3%)	5 383 -	57 478 (7%)
Java	240 733 (36%)	248 449 (37%) 102 807 (15%)	9 549 (1%)	65 537 (10%)
Bali-Nusateng-Timor	92 244 (34%)	131 813 (48%) 19 746 (7%)	8 098 (3%)	22 574 (8%)
Kalimantan	206 844 (53%)	148 692 (38%) 440 -	17 974 (5%)	15 973 (4%)
Sulawesi	351 273 (67%)	119 162 (23%) 5 715 (1%)	9 054 (2%)	35 714 (7%)
Maluku-Irian Jaya	126 172 (46%)	28 336 (10%) 1 013 -	101 077 (37%)	16 757 (6%)
Total	1 537 109 (51%)	930 958 (31%) 157 584 (5%)	151 135 (5%)	214 033 (7%)

Source: Fisheries Statistics of Indonesia, DGF, 1994

The tuna canning industry has developed since the 1980s mostly through joint-ventures and foreign collaboration. There was a rapid expansion of production capacities in the mid 1980s in the canning industry which now has a daily production capacity of around 434 MT.

Table 7: Indonesia - Data on Ice Plants, Canning Plants and Cold Rooms (1991)

Area	Ice Plant	Canning Plant		Cold Room		
	Pro.Cap (MT/day)	Pro.Cap (MT/day)	Act.Pro. (MT/day)	Pro.Cap. (MT/day)	Act.Pro. (MT/day)	Stor.Cap. (MT/day)
Sumatra	107	7	4	188	83	10 220
Java	230	175	88	467	389	13 592
Bali-Nusateng	60	50	10	44	56	2 490
Kalimantan	84	103	20	64	34	3 720
Sulawesi	20	75	20	102	33	2 120
Maluku - Irian Jaya	-	25	0	190	30	4 520
Total	501	435	142	1 052	624	36 662

Source: DGF Profile, 1991

Table 8: Indonesia - Fish Disposition Data (1988, 90 & 92)

() indicates the percentage increase over the 1988 figure

Type	1988 (MT)	1990 (MT)	1992 (MT)
Fresh	1 374 789	1 464 571 (+7)	1 530 336 (+11)
Dried/salted	748 134	763 457 (+2)	930 958 (+24)
Boiled	84 540	121 836 (+44)	157 431 (+86)
Others	131 844	156 635 (+19)	174 147 (+32)
Frozen	82 410	109 808 (+33)	151 135 (+83)
Canned	11 991	26 029(+117)	21 508 (+79)
Fish Meal	17 113	20 308 (+19)	27 444 (+60)

Source: Fisheries Statistics of Indonesia, DGF, 1994

Going by the production data of canned fish, there appears to be over capitalisation in the canning industry in Indonesia. The geography of the country restricts the marketing and distribution possibilities for fresh fish both for domestic consumption and export. This has resulted in the growth of a wide range of cured/preserved products (Table 8).

Investment Needs:

New and replacement investment in production and marketing of ice. Production and marketing of value-added shrimp, tuna and cephalopod products. Refurbishing and upgrading existing shrimp and tuna processing facilities and market development. Internal transport, air/sea freight facilities for live/high value exports. Improved processing and packaging for traditional products to facilitate exports to ethnic markets. Fishmeal production. Quality control facilities and programmes. Market information, communication and databases.

MALAYSIA

Exports from Malaysia amounted to around 175 000 MT in 1991 consisting mainly of fresh, chilled or frozen shrimp and fish (45 percent) and dried, salted or smoked fish (31 percent) (Table 4). According to government projections, against the landings of less than 180 000 MT by deep sea fisheries, there is scope for some 323 000 MT annual production, including 100 000 MT of tuna from deep sea fishing especially off the east coast of Peninsular Malaysia as well as off the Sabah and Sarawak coasts. This calls for additional investment in suitable boats, gear and processing facilities. Shrimp culture holds potential for growth as evidenced by the rapid increase in production over the last few years and corresponding investment in processing and marketing sectors has to be considered.

Tuna landings have increased from 6 000 MT in 1970 to 29 000 MT in 1987 with some signs of decline thereafter. In 1991, more than 10 000 MT of tuna were imported for export processing and re-exports. Tuna exports increased about four fold between 1984 and 1989. Most of the exports were in canned form, followed by chilled and frozen tuna.

Ice is provided by a network of around 180 ice plants with a total daily production capacity of approximately 4 800 MT located in major fishing centres (Table 9). The estimated potential annual ice production of around 1.35 million MT can be considered as adequate to satisfy the industry's needs. The price of fish is relatively high in Malaysia when compared to the price in other countries surveyed (Table 10). Quality fish demands a better price in the market and hence there is higher ice usage by the industry. Total cold storage capacity is 31 000 MT. Altogether 51 freezing plants out of a total of 223, and 33 canning plants are directly involved in export production. Also there are 440 fish cracker processors, 232 dried salted fish processors and 158 fish paste processors and 82 fishmeal plants under cottage level processing.

It is estimated that some 50 000 MT of tuna are available off the east coast while another 50 000 MT can be caught off the coasts of Sabah and Sarawak. To exploit this, investment is needed to upgrade the craft and gear used as well as for strengthening the storage, transport, processing and other facilities.

Fish canning plants had done well, but currently constraints in raw material supply, high cost of tin plates and shortage and high cost of labour are some of the problems haunting the canning sector.

The fish processing sector has to evolve into a modern industry with cost effective and sophisticated plants and machinery. To ensure economic viability of the sector, there should be flexibility in raw material receipts to cater to multi species processing which needs to be strengthened through additional investment in processing and marketing facilities. Value addition to the traditional products is a major area for expansion through modernisation of the processing sector.

Table 9: Malaysia - Ice and Fish Production by State (1992)

State	No. of ice factories	Daily production capacity	Annual production Assuming 280 dry production	Total fish production MT
Perlis	3	119	33 320	60 673
Kedah	5	231	64 680	62 555
Penang	8	852	238 560	33 752
Perak	21	437	122 360	201 852
Selangor	14	424	118 720	98 727
Malacca	2	47	13 160	2 378
Negeri Sembilan	1	28	7 840	413
West Johor	5	167	46 760	13 645
East Johor	2	110	30 800	70 607
Kelantan	18	204	57 120	24 035
Terengganu	8	606	169 680	87 443
Pahang	7	631	176 680	111 452
Sarawak	47	457	127 960	88 241
Sabah	34	474	132 720	148 000
W.P. Labuan	5	47	13 160	19 743
Total	180	4 834	1 353 520	1 023 516

Investment Needs:

Production and marketing of value-added shrimp and cephalopod products and communitied products. Improved processing, packaging and marketing of traditional products both for local, regional and ethnic markets abroad. Refurbishing and upgrading existing shrimp processing/canning facilities with an expansion of product range. Improved air/sea freight facilities for live/high value products. Improved packaging technology for retail marketing and for exports. Warehousing and retailing facilities. Fishmeal production. Transport fleet expansion and modernisation.

PHILIPPINES

Marine landings constituted nearly 64 percent of the total fish landed in the Philippines in 1991, followed by aquaculture (27 percent) and inland fisheries (9 percent) (Table 2). Out of a total production of nearly 2.6 million MT only a very small percentage, 145 000 MT or 5.5 percent of the total production is exported in fresh/frozen

Table: 10: Malaysia: Wholesale and Retail Prices of Some Commercially Important Species, December 1993

	Wholesale Price (RM)	Retail Price (RM)
Grade A - High Value		
Long Tail Shad (Terubuk)	6.03 - 9.798.05	12.14
Seabass (Siakap Putih)	6.95 - 9.868.51	11.90
Chinese Pomfret (Bawal Tambak)	20.98 - 29.9924.64	33.72
Black Pomfret (Bawal Hitam)	5.83 - 8.367.24	10.25
White Pomfret (Bawal Putih)	10.50 - 16.6713.05	19.70
Mangrove Snapper (Jenahak)	6.17 - 8.877.54	10.76
Red Seabass (Kerapu Merah)	9.60 - 16.9013.31	20.59
Threadfin (Kurau)	9.51 - 15.7911.82	18.29
Spanish Mackerel (Tenggiri Papan)	5.58 - 8.437.08	10.38
Threadfin Bream (Senangin)	7.76 - 11.819.72	14.21
Tiger Prawn (Udang Harimau)	16.20 - 24.3220.08	28.06
White Prawn (Udang Putih Besar)	15.91 - 23.4818.88	27.70
Grade B - Medium Value		
Trevally (Cermin/Sagai/Cupak)	3.44 - 5.324.39	6.47
Bream (Kerisi)	4.77 - 6.235.30	7.19
Red Snapper (Merah)	4.30 - 5.965.10	7.33
Flounder (Sebelah)	5.45 - 6.455.94	6.96
Catfish (Sembilang Laut)	4.55 - 6.385.74	7.72
Mud Crab (Ketam Batu/Nipah (Bertelur)	3.84 - 5.956.96	11.74
Mud Crab (Ketam Renjong/Laut)	3.84 - 5.954.95	7.18
Pink Prawn (Udang Merah Ros/Rotan)	3.48 - 5.775.40	7.71
Common Squid (Sotong Biasa/Cumit-Cumit)	3.76 - 6.104.78	7.31
Grade C - Low Value		
Gizzard Shad (Selangari/Kebasi)	0.59 - 1.391.19	2.15
Longtail Tuna (Tongkol Hitam)	1.83 - 3.072.59	4.04
Goatfish (Biji Nangka)	1.85 - 2.932.63	3.93
Croaker (Gelama)	1.44 - 2.802.19	4.50
Sole (Lidah)	0.40 - 1.000.60	1.60
Bigeye Scad (Lolong)	1.23 - 2.25	1.92 - 3.21
Conger eel (Malong)	1.42 - 2.60	2.19 - 3.52
Bony Bream (Tamban Beluru)	0.96 - 1.87	1.64 - 2.73
Hairtail (Timah)	1.06 - 2.04	1.74 - 2.91
Shark (Yu)	0.72 - 1.66	1.29 - 2.77

Source: Fisheries Development Authority of Malaysia

Table 11: Indonesia, Malaysia, Philippines, Sri Lanka and Thailand:
Fish Landings Categorised by Value and Export Potential, 1991 (MT)

Group	Indonesia	Malaysia	Philippines	Sri Lanka	Thailand
High	726 355 (23%)	131 703 (21%)	479 908 (21%)	46 625 (24%)	508 410 (16%)
Medium-Low	2 458 645 (77%)	488 297 (79%)	1 831 883 (79%)	151 438 (76%)	2 576 760 (84%)
Total	3 185 000	620 000	2 311 797	198 063	3 085 170

(29 percent), canned (34 percent) or dried/salted (9 percent) form (Table 11).

Targetted per capita fish consumption is 44 kg/year against the present level of over 35 kg. Nearly 20 percent of the quantity of fish consumed locally is from the aquaculture sector. While 75 percent of the domestic consumption is in fresh form (Table 12), the per capita consumption of cured fish including dried fish in the Philippines is the highest among Southeast Asian countries.

Table 12: Philippines - Fish Consumption Pattern

Product Form	Quantity Consumed (MT)	Percentage of Total Catch
Fresh	143 678	74.5
Frozen	128 291	6.7
Cured	235 731	12.2
Canned	81 122	4.2
Others	45 679	2.4
Total	1 927 610	100.0

Source: Based on FAO

Apart from shrimp, tuna and cephalopods, there is a wide range of other fish and fishery products among the annual catches showing a rising trend in production. In terms of quantity the predominant species are roundscad, anchovies, sardines, mackerels and threadfin bream. Some of these species have good export potential. However, nearly 53 percent of the volume of imports for 1984-92 was accounted for by frozen sardine and mackerel which were used by local canneries. Fishmeal accounted for 73 percent of the value of the country's fisheries imports for the same period.

The generally poor quality of fish marketed locally has been attributed to inter-related factors such as insufficient ice, poor infrastructure and transport facilities, poor sanitation and hygienic practices both at the fisherman's end as well as during distribution and storage. The traditional fish containers are called 'baneras'. The government has been promoting the use of returnable HDPE fish containers onboard fishing vessels to improve quality and enhance efficiency in fish handling.

Presently there are nearly 400 private sector freezing plants involving some 35 firms engaged in export processing of fish and fishery products. In the public sector there is a large Food Terminal Complex

located in Manila with considerable frozen storage and blast freezing capacity, leased out to private parties for export processing.

The Philippines is the third biggest producer of tuna and tuna-like fishes in the world. Over 20 percent of total marine fishery production in 1991 was of tuna and tuna-like species. It is one of the most important export commodities in the country, exported as fresh/chilled, frozen or canned. A large number of foreign joint ventures are operated by several Filipino tuna fishing companies. With the liberalisation of tuna imports, both the quantity of raw material imported and canned tuna exported increased markedly in 1989; but exports started declining in subsequent years. The 1992 performance in exports of canned tuna has shown an improvement as a result of increased quantities imported by the US.

Presently there are 26 fish canning plants mostly engaged in tuna and sardine canning. Out of these, 16 canneries including one of the three largest tuna canneries are located in Metro Manila. Others are based in different Provinces, nearer to fish landing centres.

Compared to the neighbouring competitors such as Thailand and Indonesia, the cost of production of major export commodities like shrimp, tuna and cephalopods is found to be quite high in the Philippines. Together with this, the inadequate supply of quality raw materials and high rate of interest on loans make export production of certain products somewhat uneconomical. Lack of reefer sailings to international markets from main production centres is another handicap.

For enhancing production of shrimp, tuna and cephalopods as well as other products there is need for additional investments in aquaculture, tuna purse seiners, storage and transport facilities and manpower training. Hatcheries and feed mills will have to be expanded when aquaculture production increases in due course.

Investment Needs:

Investment in production and marketing of ice, and cold storage. Production and marketing of value-added tuna, shrimp and cephalopod products and upgrading existing processing facilities and market development. Inter-Insular transport, air/sea freight facilities for live/high value exports. Processing and packaging for traditional products to facilitate exports to ethnic markets. Fishmeal production. Quality control facilities and programmes. Market information, communication and databases.

SRI LANKA

Marine landings account for nearly 88 percent of the total of around 198 000 MT of fish landed (Table 2), most of which are consumed locally mainly in the fresh form. Around 12-15 percent of the landings and nearly 25 percent of the inland fish catch is converted to dry fish. Exports account for only 1 percent of the landings and mainly consist of shrimp, tuna, lobster and crabs. Around 83 percent of the marine landings are from the coastal fisheries with a fleet strength of around 25 000 non-powered or out-board powered boats. Main items of export are shrimp and tuna (Table 4).

The infrastructure facilities at most landing sites can be categorised as inadequate. Total ice production capacity of nearly 60, mostly privately owned, ice plants is estimated at around 730 MT per day. However a large number of ice plants are not operational and need refurbishing, thus creating shortfalls in supply in many regions. The marine landings mainly consist of shore-seine small pelagic species such as sardines, herrings, anchovies, etc. Due to the relatively high cost, ice is mostly used for high value species and for chilling fish to be transported to urban markets. Fish is generally transported in wooden boxes.

Most existing cold room facilities need refurbishing to operate efficiently. There is much potential for expanding tuna exports, especially high value exports to Japan. Improved air transportation, land

facilities and transportation, are needed in this respect.

Shrimp plants need modernisation and expansion of their product lines to include value-added IQF shrimp and other products.

Investment Needs:

Export processing of high value tuna products and value-added products including IQF shrimp. Refurbishing ice production and cold storage facilities and setting up new facilities where needed. improved air freight facilities.

THAILAND

The marine sector accounted for nearly 83 percent of a total of nearly 3.0 million MT of fish landed in Thailand. Nearly 19 percent of the landings are disposed in the fresh form while 24 percent is consumed by the canning industry.

It is interesting to note that nearly 35 percent of the fish landed is converted to fishmeal, while 17 percent is frozen (Table 13). It is believed that the rise in quantity of marine fish used for export processing has led to its fall in consumption in fresh form. Exports account for nearly 37 percent of the fish production. Shrimp and other crustaceans as well as cephalopods and some finfish species are the items commonly used for freezing, mostly for exports.

For the prime species like shrimp, tuna, cephalopods etc received for export processing, the quality of the raw material is often maintained at a satisfactory level when received at the processing plants. Even though the number of ice plants have increased over the last few years with a corresponding increase in ice production (Table 14), quality deterioration of catches still takes place sometimes due to improper icing and inadequate infrastructure facilities at some locations.

Both traditional and modern fish processing activities are carried out side by side. However, the labour intensive traditional processing activities are losing ground in competition with modernisation (Table 15).

No major tuna species are landed from Thailand waters, but there has been a sustained rise in production of tuna-like species from 1985 onwards due to increased fishing effort stimulated by high prices paid by the canneries. Development of fish attraction devices combined with purse-seines and introduction of sophisticated electronic devices for fishing and fish landing have helped in this process.

Table 13: Thailand - Fish Disposition Data (1987, 89 & 91)

() indicates the percentage increase over the 1987 figure

	1987 (MT)	1989 (MT)	1991 (MT)
Fresh	559 108	600 655 (+7)	597 178 (+7)
Frozen	338 814	480 277 (+36)	527 925 (+56)
Canning	843 665	684 613 (-19)	775 808 (- 8)
Cured	175 649	163 469 (- 7)	162 620 (- 7)
Fish meal	894 516	1 071 025 (+20)	1 115 298 (+25)
Others	17 504	14 916 (-15)	14 439 (-15)

Source: Department of Fisheries, Thailand

Table 14: Thailand - Freezing/Ice Plant Data (1987, 89 & 91)

Facility	1987	1989	1991
No of freezing plants	80	94	108
No of ice plants	166	177	191
Ice production:			
Cube (mill boxes)	24	29	50
Plate (MT)	151 920	168 300	129 000

Source: Department of Fisheries, Thailand

Table 15: Thailand - Number of Fish Processing Factories by type of Fish Processing (1980-90)

Type of Plant	1980	1985	1986	1987	1988	1989	1990	% Variation (1985-90)
Freezing	90	80	84	80	84	94	108	35
Canning	9	39	41	41	45	43	42	8
Fish sauce	98	114	111	110	116	118	116	2
Budu sauce	14	33	30	23	23	29	29	-12
Steamed Fish	81	115	94	78	65	65	55	-52
Smoked Fish	1	171	180	86	40	38	36	-79
Salted Fish	327	978	943	671	743	830	750	-23
Dried Shrimp	139	148	165	176	195	213	205	39
Dried Squid	317	879	828	711	671	772	712	-19
Dried Shellfish	16	674	613	580	646	646	646	-4
Fish Ball	11	54	69	79	82	95	94	74
Fish/Shrimp Cracker	4	76	107	65	71	95	90	18
Fish Meal	95	92	93	95	96	98	104	13
Total	1 202	3 453	3 358	2 795	2 877	3 136	2 987	-13

Source: DOF, Bangkok

While the total number of canneries for all fishery products was 26 in 1983, the number has gone up to 42 in 1990. There are 17 tuna canneries of which the two top canneries each have a 300 MT/day installed capacity. The main product forms are tuna and shrimp in brine, as well as tuna dressed and in oil. Over 80 percent of the tuna raw material for canning is imported. Apart from tuna, the species canned are Indo-Pacific mackerel, shrimp, crab, squid and other shellfish with other product forms including pet food.

In 1990 there were 104 fishmeal plants in operation against 92 plants in 1985 when the production capacity was only 83 percent of that in 1990. The current trend of expanding fishmeal production is mainly due to increasing domestic need for fishmeal as an essential ingredient in the production of shrimp feeds. A substantial quantity is also exported.

Innovative packers have successfully introduced a wide range of convenient items in international markets. Battered and breaded fish and shellfish, microwaveable products and ready-to-cook meals are some of these products processed with technology transfer through joint ventures.

Considering the present state of infrastructure facilities, there is need for improvement in fish landing centres, handling practices as well as quality control measures. Research and development to tackle environmental problems as well as processing and marketing aspects is another area in need of investment that should also include transfer of technology.

Fishery industry has been receiving both technical assistance and credit facilities through various governmental and international agencies. There are also several universities offering fishery courses and research and training facilities at undergraduate and post graduate levels leading to fishery degrees.

Investment Needs:

Modernisation of seafood processing plants and expansion of production of value-added products, technology transfer and market development. Investment in ice production and cold storage in major landing sites and market centres. Environmental monitoring, pollution control and waste management. Processing and packaging of traditional products and export promotion. Retail and wholesale market facilities. Collection and dissemination of market information.

Table 16: Priority Areas for Investment in Basic Fish Processing and Marketing Sectors in the Survey Area

Priority Ranking

- 1 = High
- 2 = Medium
- 3 = Low

Facilities	Indonesia	Malaysia	Philippines	Sri Lanka	Thailand
<u>Transport facilities</u>					
Transport fleet	2	2	2	2	2
Containers	2	2	2	2	2
Air/sea freight	1	1	1	1	1
<u>Processing and storage</u>					
Water	2	3	2	2	2
Ice	1	3	1	1	2
Cold room	3	3	2	2	3
Freezing	2	2	2	2	2
Freezing-IQF	1	2	1	1	2
Canning	3	3	3	3	3
Value addition	1	1	1	1	1
Laboratory/QC	1	2	1	1	2
<u>Marketing</u>					
Wholesale marketing	2	2	2	2	2
Retail marketing	2	2	2	2	2
Market data	2	2	2	2	2

THE PCIC-FSP CREDIT GUARANTEE SCHEME

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1. INTRODUCTION

This paper presents the nature and concept, objectives and basic features of the credit guarantee scheme for small fishermen hereinafter called the "PCIC-FSP Credit Guarantee Scheme" or "Scheme", implemented by the Philippine Crop Insurance Corporation (PCIC). The operating procedures, experience, as well as issues and problems related to the Scheme are also included in the paper to serve as a guide for those who are interested or are contemplating to implement a similar guarantee program in the future.

2. NATURE AND CONCEPT

The PCIC-FSP Credit Guarantee Scheme which is a sub-component of the credit component of the Fisheries Sector Programme (FSP)¹ of the Department of Agriculture (DA) acting through the Agricultural Credit Policy Council (ACPC) is a risk-reduction mechanism in rural finance. For consideration of a guarantee fee, the

¹ The Fisheries Sector Program is the government's coordinated initiative to address the multiple problems and opportunities in the sector as follows: (i) in coastal fisheries: resource regeneration, environmental rehabilitation, balancing of fishing effort to maximum sustainable yield, control of destructive fishing activities, and alleviation of poverty among municipal fisherfolk, particularly through income generating activities; (ii) in aquaculture: intensification of production to raise yield both in terms of quantity and quality; and (iii) in offshore commercial fishing: Inducement of commercial fishing away from overfished coastal waters and into the exploitation of deep sea resources. The FSP has several components including: resource and ecological assessment, coastal resource management, law enforcement, credit, research and extension and infrastructure.

guarantor undertakes to pay to the lender up to the extent of the guarantee cover the outstanding balance of the loan of the borrower in case of default due to any and all causes. The guarantee payment, however, does not extinguish the obligation of the borrower, i.e. he is merely given more time to pay his debt. It may be pointed out that under the Scheme, the lender which receives guarantee payment is required to continue to exert best efforts to collect from the loan and return to the guarantor the amount drawn from the guarantee fund. Thus, the guarantee payment is considered just as an advance payment.

There are three parties involved under the Scheme, namely: the guarantor, the lender and the borrower. The guarantor is the PCIC-FSP Guarantee Fund (amounting to P54.350 million) provided by the ACPC and administered by the PCIC under the Fisheries Sector Program. The lender is the bank or non-bank lending conduit such as non-government agencies (NGOs), fishermen's associations and cooperatives accredited to participants under the Scheme. The borrower is an individual or a group identified as coastal beneficiaries or fisherfolk eligible to participate under the FSP.

3. OBJECTIVES

The objectives of the Scheme congruous with the overall objectives of the FSP are as follows:

- 3.1 To provide support to the systematic efforts of the government to effect responsible resource management, environmental rehabilitation, poverty alleviation and improved productivity in the fisheries sector through policy and institutional reforms as well as the implementation of certain livelihood programs.
- 3.2 To provide assistance to small fishermen in the priority bays (Manila Bay, Celeuag Bay, Tayabas Bay, Ragay Gulf, San Miguel Bay, Sorsogon Bay, Lagonoy Gulf, San Pedro Bay, Ormoc Bay, Sogod Bay and Pangil Bay) and regions (Regions 1, 3, 4, 5, 6 and 9) in obtaining credit from formal sources under competitive terms.
- 3.3 To encourage banking institutions and lending conduits to extend credit to small fishermen for fishery-related projects and alternative land-based livelihood activities without being too concerned about collateral.
- 3.4 To encourage the formation of associations among fishermen in the priority bay areas and regions such as cooperatives or analogous self-help groups as desirable mechanisms for individual fisherfolk development.

4. BASIC FEATURES

Following are the basic features of the PCIC-FSP Credit Guarantee Scheme:

4.1 *Extent of Guarantee*

The guarantee may be up to but not to exceed 85% of the outstanding balance of the loan, exclusive of interest. The extent of guarantee depends on the performance of the lenders - particularly in terms of repayment rate, on which basis they are classified into A, B, C and S. This classification in turn serves as basis of the sliding extent of guarantee as follows:

CLASSIFICATION	EXTENT OF GUARANTEE %
A	85
B	75
C	65
S	Suspended

4.2 *Term of Guarantee*

The period of guarantee is co-terminus with the term of the loan. However, for loans with maturity of more than one year, corresponding guarantee fee may be paid by the lender at each anniversary date. The payment of the guarantee fee after the initial year must be made within thirty days after each anniversary date, otherwise the guarantee cover for the remaining term of the loan shall be deemed cancelled.

4.3 *Guarantee fee*

The Guarantee fee which is non-refundable upon acceptance of the loan for guarantee coverage is as follows:

- (a) For a loan with maturity of one year or less, the fee is 2% of the amount of loan.
- (b) For a loan with maturity of more than one year, the annual guarantee fee is 2% of the loan outstanding as at each anniversary date to be paid by the lender subject to a short-term rate if the remaining term after the preceding payment of a full-year rate is less than one year, as follows:

REMAINING TERM IN NUMBER OF DAYS	SHORT TERM FEE AS % OF LOAN OUTSTANDING
Not over 90 days	0.5
Over 90 days up to 180 days	1.0
Over 180 days up to 270 days	1.5
Over 270 days up to 365 days	2.0

4.4 *Loans eligible for guarantee cover*

Loans extended by accredited banks or lending conduits to an individual or group qualified as borrower under the FSP to finance eligible projects/activities including: (i) alternative land-based livelihood projects, e.g. poultry and livestock raising, crop production, preservation/processing projects, services and cottage industry-related activities located in the priority bay areas; and (ii) aquaculture projects, e.g. production/culture of bangus, tilapia and the like located in FSP priority regions, are eligible for coverage under the Scheme subject to the following conditions:

- (a) For individual borrower, the area to be financed (if applicable) shall not exceed seven hectares and the amount of loan shall not exceed P150,000. .
- (b) For group borrower, the aggregate amount of loan for the group shall not exceed P3,000,000 subject to Individual limitations above.
- (c) The borrower shall undertake to place himself under technical supervision of duly authorized technician and/or PCIC accredited group/individuals.

4.5 *Eligible lender/borrower*

Following are the eligibility requirements for lender/borrower under the Scheme:

A. For lender:

For banks, the applicant must not be under receivership, controllership, conservatorship or liquidation, as certified to by the Bangko Sentral ng Pilipinas (BSP). For lending conduits including

cooperatives, the applicant must be of good standing, certified as such by the proper supervising agency.

PCIC may from time to time impose additional requirements as it may deem necessary, such as feasibility studies, bio-data of officers of group borrower and the like.

B. For borrower:

For individual borrowers, the applicant must be a member of good standing of a duly accredited organization, certified as such by the head of said organization. Also he must have no adverse credit records and must show acceptable proof of residency for at least two years in the Identified Barangay within the given priority bay/region.

For group borrowers, the applicant must be duly registered and in good standing as certified to by the supervising agency. The group must also have a minimum membership of twenty members all in good standing as of the date of application for accreditation.

5. OPERATING PROCEDURES

5.1 Accreditation of lender

Any lender (bank or lending conduit) desiring to avail itself of the guarantee cover must apply for accreditation (Annex A) with the nearest PCIC regional office. The application must be accompanied by the following supporting documents:

- (a) Board resolution authorizing its official to transact business with the PCIC on behalf of the institution.
- (b) Certifications by the supervising agency as to eligibility (as per eligibility requirements in 4.5 hereof).
- (c) Financial statements for the past two year immediately preceding the application for accreditation.
- (d) Roster of officers of the lender.
- (e) Other supporting documents as may be required from time to time by PCIC.

Upon approval of the application for accreditation, the concerned lender shall execute Continuing Agreement (Annex B) with PCIC. This document outlines, among others, the respective duties, responsibilities and obligations of the parties involved.

5.2 *Application for guarantee coverage*

The List of Borrowers (Annex C) submitted by the lender together with the guarantee fee to the concerned PCIC regional office serves as the application for coverage under the Scheme. The lender must submit said List of Borrowers and remit the guarantee fee to the PCIC regional office within 15 working days from the date of the granting of the loans, otherwise the subject loans shall become ineligible for guarantee coverage.

PCIC signifies its acceptance of loans submitted for guarantee cover through a Letter of Guarantee (Annex D) to the lender concerned.

5.3 *Calls on guarantee*

Upon recognition of default, the lender must file the corresponding Claim for Guarantee Payment (Annex E) with the PCIC regional office concerned not later than 90 days after determination of the default. The borrower is considered to be in default when he is not able to pay his loan upon maturity in the case of short-term loans, or has failed to pay three consecutive monthly amortizations, or one quarterly/semi-annual/annual amortization in case of term loans. The claim for Guarantee Payment must be supported by the following documents:

- (a) List of Defaulted Loans (Annex F).
- (b) Proofs of "best efforts" to collect the loans, e.g. three collection letters with intervals of not less than fifteen calendar days, and/or in case the loan is collateralized, evidence that the lender has taken steps to foreclose such collateral.
- (c) Schedule of Plan of Collection by the lender.
- (d) Such other supporting documents as may be required by PCIC.

As a general rule, processing and guarantee payment must be completed within thirty days from receipt by PCIC of complete documents. The lender, as a condition for the release of the guarantee payment is required to execute a Deed of Subrogation and Undertaking transferring to the PCIC-FSP Guarantee Fund its right over the remaining balance of the loans subject of guarantee.

payment to the extent of 85% thereof (or applicable proportion if extent of guarantee is not 85%). Notwithstanding the execution of said document, the lender must commit itself to continue diligent efforts to collect from such loans and remit to the PCIC-FSP Guarantee Fund the proportion of the amount collected corresponding to the actual guarantee payment subject to the prescriptive period and penalty provisions of the Continuing Guarantee Agreement.

6. EXPERIENCE

6.1 *Loans guaranteed*

From the start of implementation in October 1990, until the end of 1994, the Scheme extended guarantee coverage to eligible loans of some 10,384 beneficiaries amounting to P153.475 million, as shown in Table 1.

Table 1. LOANS GUARANTEED

YEAR	NUMBER OF BENEFICIARIES	AMOUNT OF LOANS GUARANTEED (PM)
1990	25	0.150
1991	1,453	10.168
1992	3,599	66.616
1993	3,713	62.740
1994	<u>1,594</u>	- <u>13.801</u>
Total	10,384	153.475

It may be noted that following a rather rapid growth in coverage during the early years of implementation of the Scheme, an abrupt decline in the amount of loans guaranteed was experienced in 1994. This was mainly due to the exclusion of FSP-originated loans extended by the Landbank of the Philippines (LBP) without the bank's counterpart funds of at least 50% from the coverage of the PCIC-FSP Credit Guarantee Scheme starting 1994.

As one of the implementors of the credit component of the FSP, the ACPC allocates out of the FSP funds certain amount annually to LBP for onlending to coastal beneficiaries. Until 1993, PCIC was allowed to guarantee the loans extended by the bank under the Scheme, which then comprised the bulk of the guarantee portfolio as may be inferred from Table 2 below.

Table 2. LOANS GUARANTEED BY BANKS/LENDING CONDUITS

BANK/LENDING CONDUIT	NO. OF BENEFICIARIES	AMT. OF GUARANTEED (PM)
A. <u>1990-1993</u>		
LBP	8,539	135.448
Private Rural Banks	71	1.121
Cooperatives	180	3.105
<u>Sub-total</u>	<u>8,790</u>	<u>139.674</u>
B. <u>1994</u>		
LBP	1,317	8.981
Private Rural Banks	1	0.050
Cooperatives	276	4.770
<u>Sub-total</u>	<u>1,594</u>	<u>13.801</u>
GRAND TOTAL	10,384	153.475

The restriction on LBP loans clearly resulted in the sudden fall in the amount of loans guaranteed under the Scheme in 1994. By type of projects/activities, the loans guaranteed are broken down in Table 3, hereunder.

Table 3. LOANS GUARANTEED BY TYPE OF PROJECTS/ACTIVITIES

PROJECT/ACTIVITY	NUMBER OF BENEFICIARIES	AMT. OF LOANS GUARANTEED (PM)
A. <u>Fishery-related</u>		
Aquaculture	1,334	54.285
Fishing	6,801	91.002
<u>Sub-total</u>	<u>8,135</u>	<u>145.287</u>
B. <u>Non-fishery-related</u>		
Livestock and Poultry	446	3.119
Crop Production	53	0.473
Others	<u>1,750</u>	<u>4.597</u>
<u>Sub-total</u>	<u>2,249</u>	<u>8.189</u>
GRAND TOTAL	10,384	153.453

It may be gleaned from the above Table that fishery-related projects/activities accounted for roughly 94.7% (aquaculture, 35.4% and fishing, 59.3%) of the total loans guaranteed under the Scheme. Alternative land-based projects/activities contributed a measly 5.3% share to the total portfolio.

6.2 *Guarantee claims*

From the start of implementation of the Scheme until the end of 1994, the PCIC-FSP Guarantee Fund incurred P6.216 million guarantee claims of some 125 beneficiaries, as shown in Table 4 below.

Table 4. GUARANTEE CLAIMS

(Since Start of Implementation to end of 1994)

STATUS	NUMBER OF BENEFICIARIES	AMT. OF CLAIMS (PM)
Paid	64	1.862
Unpaid	<u>61</u>	<u>4.354</u>
	125	6.216

The guarantee claims incurred under the Scheme represent 4.1% of the total loans guaranteed. It may be noted that a large chunk (P4.354 million) of the guarantee claims remained unpaid as at end of 1994. This is because the concerned lenders had not yet completed the documentation requirements to trigger the release of guarantee payments.

7. ISSUES AND PROBLEMS

A cursory look at the experiences of the Scheme reveals that fishing projects/activities contribute the largest share (59.3%) to the total loans guaranteed. Ironically, the main objective of the FSP is to drive fishermen away from fishing to allow for the regeneration/rehabilitation of overfished coastal waters. Corollarily, alternative land-based livelihood projects/activities accounted for a measly 5.3% share in the guarantee portfolio indicating that the accomplishment of the Scheme in terms of encouraging small fishermen to engage in these projects/activities in lieu of fishing leaves much to be desired. The difficulty in organizing small fishermen into associations or groups that would render them eligible to participate in the FSP due to lack of qualified NGOs is certainly a contributory factor to this.

Also, the meagre participation of private rural banks and lending conduits of 5.9% (combined) vis-a-vis the total loans guaranteed, indicates that despite the availability of the guarantee facility, these private lenders have still been reluctant to extend loans to the target coastal beneficiaries. Perhaps this lukewarm attitude could be attributed to high transaction costs and high risks involved in lending to small borrowers, including small fishermen.

8. CONCLUDING NOTE

Based on the foregoing, the PCIC-FSP Credit Guarantee Scheme appears to be inadequate vis-a-vis drawing small fishermen away from fishing and encouraging them to engage instead in alternative land-based livelihood projects/activities to allow for regeneration/rehabilitation of overfished coastal waters. In the same token, the effectiveness of the Scheme to encourage private lenders to extend loans to small fishermen to finance their (fishermen) projects/activities has remained suspect.

Complementary measures such as those addressing the difficulties in organising fishermen into groups or associations (e.g. strengthening NGOs through fiscal incentives, etc.) as effective conduits of government programs for fisherfolk development, and those providing additional incentives to lenders (e.g. tax incentives, low cost of funds, etc.) to participate actively in small fishermen lending must be undertaken to ensure the success of the PCIC-FSP Credit Guarantee Scheme and the Fisheries Sector Program as a whole.

REFERENCES

1. The Fisheries Sector Program (FSP) Credit Component: A Documentation of its Credit Delivery Experience. ACPC FSP Project Team. 1993.
2. Loan Nos. 971/972 PHI: Fisheries Sector Program. Mid-Term Review Mission. 1993.
3. Primer on the PCIC Fisheries Sector Program Guarantee Scheme.
4. PCIC Annual Reports.

ANNEX "A"

PCIC-FSP FORM NO. 001A

APPLICATION FOR ACCREDITATION
UNDER THE PCIC-FSP GUARANTEE PROGRAM
(Private Banking Institution)

Date

The Regional Manager
PCIC RO No. _____

Sir:

This is to request accreditation of our bank,
_____, located in _____
herein represented by the undersigned in his capacity as
_____ thereof under Board Resolution No. _____
dated _____ herein attached, to qualify as a
participating banking institution to the PCIC-FSP Guarantee
Program.

As proof of our good standing as a banking institution,
attached is the certification from the Central Bank of the
Philippines that our bank is not under receivership/liquidation
nor disqualified to participate under any of its specialized
lending program.

Also attached is a list of borrowers eligible for PCIC-FSP
guarantee cover which we intend to finance and the corresponding
amounts programmed for livelihood projects enumerated herein.

Very truly yours,

PCIC-FSP FORM NO. 002

CONTINUING GUARANTEE AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

This AGREEMENT, made and entered into by and between:

The PHILIPPINE CROP INSURANCE CORPORATION, a body corporate organized and existing under and by virtue of Presidential Decree No. 1467 as amended, represented herein by _____, in his capacity as Regional Manager, Regional Office No. _____ with office address at _____ herein after referred to as the GUARANTOR.

- and -

The _____ a banking institution/lending conduit with office address at _____ represented by _____ his/her capacity as _____, duly authorized to act for and in its behalf as per attached Board Resolution No. _____ dated _____, 19 _____. hereinafter referred to as the LENDER.

W I T N E S S E T H

- - - - -

WHEREAS, Executive Order No. 113 dated December 24, 1986 established the Comprehensive Agricultural Loan Fund (CALF) under the management of the Agricultural Credit Policy Council (ACPC), primarily as a guarantee facility in order to encourage banking institutions and lending conduits to extend credit for livelihood projects and otherwise stimulate the flow of credit from the financial centers to the countryside;

WHEREAS, in addition to the PCIC-CALF regular coverage PCIC is willing to operate another guarantee scheme specifically for the fisheries sector as contemplated in the FSP in identified priority bays and regions;

WHEREAS, under the umbrella of said fund, a PCIC-FSP Guarantee Program has been designed to provide guarantee coverage to livelihood loans granted by private banking institutions and lending conduits to coastal beneficiaries and fisherfolks (individual or group) located in priority bays and priority regions;

WHEREAS, the GUARANTOR implements and administers the PCIC-FSP Guarantee Program under an arrangement whereby the GUARANTOR, for consideration of a guarantee fee, undertakes to indemnify the LENDER for defaults incurred by its borrowers arising from losses caused by risks guaranteed against up to 85% of the outstanding loan;

WHEREAS, the LENDER is desirous of participating in the PCIC-FSP Guarantee Program being administered by the Guarantor;

NOW, THEREFORE, for and in consideration of the mutual covenants, premises and stipulations herein set forth, the parties herein hereby agree and respectively bind themselves as follows:

1. That the LENDER agrees to have all borrowers covered with guarantee and the GUARANTOR agrees to guarantee said borrowers subject to compliance with the Rules and Regulations Governing the Implementation of the PCIC-FSP Guarantee Program, a copy of which is attached hereto as Annex "A" and made an integral part of this AGREEMENT;
2. That the LENDER binds itself to comply with all the obligations and responsibilities provided for in the aforesaid Rules and Regulations including but not limited to the subsequent submission of a "List of Borrowers for

Guarantee Coverage" in the prescribed forms; as provided in Section 13.1 of the aforementioned Rules and Regulations;

3. That subject to the amount of funds made available by the Agricultural Credit Policy Council to the program, and such other conditions as provided for in the aforesaid Rules and Regulations, the Guarantor reserves the right to accept or reject any and all loans submitted for guarantee coverage by the LENDER, notwithstanding the existence of this AGREEMENT;
4. That the LENDER shall abide by the penalties and/or sanctions that may be imposed upon it by the GUARANTOR for violation of, or non-compliance with, any of the provisions of the said Rules and Regulations;
5. That the LENDER authorizes the GUARANTOR through its duly authorized representative(s) to inspect/examine its books of accounts and other records relating to any loan covered by the PCIC-FSP guarantee;
6. That the GUARANTOR agrees to pay the legitimate claims of the LENDER to such extent and subject to such conditions provided for under the abovementioned Rules and Regulations;
7. That any amendment to the existing rules and Regulations shall be applicable to the LENDER unless it signifies its disagreement thereto in writing not later than thirty (30) days from receipt of the amendment and withdraws its participation from the PCIC-FSP Guarantee Program, provided that such withdrawal shall apply only to borrowers granted by the LENDER subsequent to the withdrawal; and
8. That this AGREEMENT shall be effective for the duration of the implementation of PCIC-FSP Guarantee Program, without prejudice in the right of the GUARANTOR to terminate this

AGREEMENT for breach committed by the LENDER of any of the terms and conditions of the AGREEMENT or violation of any of the provisions of the Rules and Regulations.

IN WITNESS WHEREOF, the parties hereunto set their hands, on

_____ day of _____, 19____ at _____.

(Name of Banking Institution/
Non-Bank Lending Conduit.)

PHILIPPINE CROP INSURANCE
CORPORATION

LENDER

GUARANTOR

By: _____

By: _____

SIGNED IN THE PRESENCE OF:

ACKNOWLEDGMENT

(Banking Institution/Non-Bank Lending Conduit)

REPUBLIC OF THE PHILIPPINES)
Province/City of _____) S.S.
Municipality of _____)

BEFORE ME, a Notary Public in and for _____,
Philippines personally appeared _____ in his
capacity as _____ of _____ with
Residence Certificate No. _____ issued at _____ on
_____, 19____ and who further exhibited to me
Certificate No. C-1 issued at _____ on
_____, 19____, known to me and to me known to be the
same person who acknowledged to me that the same is his free and
voluntary act and deed, and the free and voluntary act and deed
of the banking institution he represents.

WITNESS MY HAND AND SEAL in the _____
this _____ day of _____, 19____.

NOTARY PUBLIC

Until December 31, _____

PTR. No. _____

Issued at _____

On _____

A C K N O W L E D G M E N T

(Philippine Crop Insurance Corporation)

REPUBLIC OF THE PHILIPPINES)

City of _____) S.S.

BEFORE ME, a Notary Public for and in _____ personally appeared _____ and _____ in their capacity as _____ and _____ of the Philippine Crop Insurance Corporation with Residence Certificate No. _____ issued at _____ on _____, 19____ and No. _____ issued at _____ on _____, 19____, respectively, known to me and to me known to be the same persons who executed the foregoing instrument and acknowledged to me that the same as their free and voluntary act and deed of the Philippine Crop Insurance Corporation with Residence Certificate No. A _____ issued at _____ on _____, 19____ and No. A- _____ issued at _____ on _____, 19____, respectively, known to me and to me known to be the same persons who executed the foregoing instrument and acknowledged to me that the same is their free and voluntary act and deed as well as the free and voluntary act and deed of the Philippine Crop Insurance Corporation.

WITNESS MY HAND AND SEAL in the _____ this _____ day of _____, 19____

NOTARY PUBLIC
Until December 31, 19____
PTR No. _____
Issued at _____

Doc. No. _____
Page No. _____
Book No. _____
Series of 19____

PCIC-FSP FORM NO. 004

Date

The Manager

Name of Banking Institution/
Non-Bank Lending Conduit

Address

LETTER OF GUARANTEE

Sir/Madam:

Thank you for submitting to us the LIST OF BORROWERS FOR COVERAGE UNDER PCIC-FSP GUARANTEE PROGRAM dated _____ pertaining to (specify No.) borrowers amounting to P _____ worth of loans together with the corresponding guarantee fee amounting to P _____.

With reference to the abovementioned list, please be advised of the following:

☐ Item Nos. _____ in the list pertaining to the loans of (specify no.) borrowers amounting to P _____ are accepted for guarantee cover under the PCIC-FSP Guarantee Program, and therefore said loans are covered with a duly approved guarantee beginning on _____.

☐ Item Nos. _____ in the list pertaining to the loans of (specify no.) borrower(s) amounting to P _____ is/are not accepted for guarantee cover under the PCIC-FSP Guarantee Program for reason(s) that _____

Attached is your copy of the list reflecting thereat the loans duly accepted as well as not-accepted for guarantee cover. Also attached is our Official Receipt No. _____ dated _____ amounting to P _____ acknowledging our receipt of your guarantee fee payment.

(Please note that we have credited to our Accounts Payable to your bank the amount of P _____ pertaining to that portion of guarantee fee representing the disapproved/denied amount of loans for guarantee coverage.)

Very truly yours,

PHILIPPINE CROP INSURANCE CORPORATION

By:

Regional Manager

^{1/} Should be inserted in the letter if not all production loans are accepted for guarantee coverage.

ANNEX "E"

PCIC-FSP FORM NO. 006A

CLAIM NO. _____
DATE PREPARED _____

The Regional Manager
PCIC RO NO. _____

SUBJECT: CALL ON GUARANTEE/CLAIM FOR GUARANTEE PAYMENT

Gentlemen:

Please be informed of the default in the loan payments incurred by (No.) borrower(s) per approval list of Eligible Borrower for Guarantee Coverage (PCIC-FSP Form No. 003)

In this connection, we hereby call on the loan guarantee you issued in favor of said borrower(s). In support thereof, we are submitting herewith the following documents:

1. List of Defaulted Loans under Guarantee Coverage (PCIC-FSP Form No. 006)
2. Proof of "best efforts"
3. Schedule of Plan of Collection
4. Deed of Subrogation and Undertaking
5. Others _____

Very truly yours,

(Name of Banking Institution/
Non-Bank Lending Conduit)

By:

(Authorized Bank Official)

Instructions:

1. Accomplish this form in three (3) copies.
2. Send original and duplicate to PCIC Regional Office.
3. Claim number should be numerical, ex. 87-001 (87 indicates the year and 001 the claim number. Each banking institution shall maintain its control number).

APPENDIX III.D

**ADAPTATION OF NATIONAL CREDIT PROGRAMMES
TO FISHERY MANAGEMENT REQUIREMENTS
- A CASE STUDY FROM SRI LANKA**

by

U. Tietze
Fishery Industry Officer
FAO, Rome

ACKNOWLEDGEMENT

A large part of the case study which is presented in this paper is based on the work of Mr. Claude Fernando, Director of the Asian Development Bank's Fisheries Project in Sri Lanka, and Mr. A. Sarath de Silva, Deputy General Manager of the Bank of Ceylon, who, in 1994, carried out studies on institutional fishery credit and fisheries management in Sri Lanka on behalf of the FAO Fisheries Department. Their findings were presented at the National Workshop on Community-Based Fishery Management Systems in Sri Lanka which was held in Colombo in September 1994.

Other sections of the case study, particularly the review of the fishery credit operations of the Bank of Ceylon, are based on enquiries of the author during a stay in Colombo in June 1994.

The author would like to thank the officers of the Department of Fisheries in Sri Lanka, the Central Bank of Sri Lanka, and the Bank of Ceylon who assisted in compiling the information which is presented in this report. Special thanks go to Mr. K. Thurairajah, Deputy General Manager of the Bank of Ceylon and to Mr. G.M.P. de Silva, Executive Director, Central Bank of Sri Lanka.

ABSTRACT

The paper analyzes the relationship between institutional fishery credit and fisheries management in Sri Lanka. It sets out by reviewing the National Fisheries Development Plan for Sri Lanka for the period 1990-1994 as well as the draft plan for 1995-1999. This is followed by a brief summarization of the management measures which have been introduced in the fisheries sector of Sri Lanka in recent years.

The paper then identifies the investments envisaged in the fisheries development plans and discusses their relevance to management issues. The role foreseen for financial institutions in meeting these investment requirements and development needs through provision of credit is then analyzed.

The role of external lending agencies and donors assisting in the various investment and development activities of the National Fisheries Development Plan is explained and their views are given on how credit should be provided.

Recently, international development banks and funds seem to have changed their policies and have started to channel their funds through the National Development Bank and other private commercial banks rather than cooperating with public sector commercial and agricultural development banks as in the past.

Management-related issues, such as the provision of infrastructure for off-shore fishing by the private sector and creation of alternative employment opportunities for artisanal fishing communities outside the fisheries sector, are among the priority areas of international financial institutions and donors.

The paper continues by analyzing recent changes in the rural credit scenario in Sri Lanka. These changes have greatly reduced, if not eliminated, the role of the Central Bank of Sri Lanka with regard to rural finance. The Central Bank no longer provides refinance to commercial banks neither does it any longer set targets for the disbursement of agricultural and rural credit nor monitor their achievement.

Also it no longer directs or monitors the operation of the regional rural banks in Sri Lanka whose role is presently being reviewed. No decision has been taken about their future functioning at the time the information for the case study was collected.

An assessment of the performance of the past fishery credit schemes in Sri Lanka follows describing the programmes in terms of production increases, generation of income and employment, loan recovery and financial viability and contribution, and exploitation and conservation of natural resources. The factors which contributed to the success or failure of these credit schemes are also identified.

Special emphasis is laid on examining if and how fisheries credit programmes are linked to management measures and whether they have any impact on management-related issues, such as over-exploitation of resources, promotion of exploitation of under-exploited resources, promotion of value-adding activities and generation of employment outside the fisheries sector.

The review of fisheries credit operations in Sri Lanka also covers the pilot credit scheme for fisherfolk in the coastal areas of the districts of Puttalam, Galle and Matara which have been implemented over a 2-year period by the Bank of Ceylon, the People's Bank, and the Regional Rural Development Banks which operate in the districts.

From a review of past and on-going credit programmes of national financial institutions for the fisheries sector in Sri Lanka, it is concluded that in the past some credit programmes for in-shore fishing craft which were linked to capital subsidies have contributed to the full and sometimes over-exploitation of coastal aquatic resources in western and southern Sri Lanka during a time when fisheries management did not exist in Sri Lanka.

Because of linkages of credit to capital subsidies and shortcomings in the procedures for selection of borrowers and appraisal of loan applications and monitoring of loan use, recovery of loans and financial viability of many lending programmes have not been satisfactory.

More recent fishery credit schemes, however, not linked to capital subsidies, and in which national financial institutions played a greater role in identification of borrowers and supervision of loan use, have demonstrated how institutional credit can be provided to the fisheries sector on a financially viable and sustainable basis for a variety of purposes, including management related ones.

The paper concludes that in a demand driven macro-economic environment, the demand for credit for management-related, fishery-related investments needs to be articulated not just by individual fisherwomen and fishermen but in a nationally coordinated way involving fisheries cooperatives and fisheries administrations.

A continuing dialogue between fisheries administrations, fisheries cooperatives/associations and financial institutions is needed to successfully promote institutional credit for fisheries management-related investments.

1. THE ROLE OF INVESTMENT, CREDIT AND MANAGEMENT IN THE NATIONAL FISHERIES DEVELOPMENT PLANS 1990-1994 AND 1995-1999

The first half of the 1990 decade has witnessed several important developments in the fisheries sector of Sri Lanka. These include:

- (i) rapid expansion of the off-shore fishery into extended areas of the Exclusive Economic Zone which is popularly known as 'multi-day' fishing,
- (ii) formal recognition of the need to have a management regime for marine fisheries in Sri Lanka as reflected in the Government's request for and receipt of UNDP's assistance for marine fisheries management,
- (iii) resurgence of fisheries cooperative societies as a vehicle for the socio-economic development of fishing communities,
- (iv) implementation of an investment programme with external financial assistance to upgrade the physical and social fisheries infrastructure, and
- (v) withdrawal of direct state patronage of inland fisheries.

In the course of the liberalization of her economy, Sri Lanka abandoned central planning. As a result, the fisheries development plan, like other sectoral development plans, became an indicative plan which describes the major economic and structural characteristics of the sector together with the Government policy and anticipated macro-economic interventions over a given period of time. The plan also describes the economic and structural changes which are expected to be facilitated by these Government policies and interventions in a particular sector of the economy.

As far as resource conservation and management is concerned, a new fisheries legislation was introduced during the 5-year plan period and new licensing systems for active fishing methods were established. In order to encourage participation of resource users in the management process, some of the management measures are being organized under the umbrella of fisheries cooperatives and a programme to make fishermen aware of the importance of resource conservation and fisheries management has been implemented.

International/external technical assistance is being provided by UNDP/FAO and the Asian Development Bank (AsDB) in formulation of fisheries legislation, baseline surveys, institutional strengthening, etc. to enhance national capabilities in the field of fisheries management.

1.1 Objectives of fisheries development plans

The 5-year Plan for Fisheries Development of Sri Lanka, formulated by the Ministry of Fisheries and Aquatic Resources, set the following objectives which were to be achieved during the period 1990-1994:

1. To increase the production of fish in order to increase the nutritional status of the people of Sri Lanka through a higher per capita of fish.
2. To promote the rational and optimum exploitation of Sri Lanka's fisheries and aquatic resources based on the application of modern science and technology;
3. To support the national programme for alleviation of poverty by increasing the incomes and standards of living of all those dependent on fisheries and fisheries-related activities.
4. To increase employment opportunities through fisheries and fisheries-related activities.
5. To increase foreign exchange earnings through exports of fisheries and aquatic products.

The draft 5-Year Plan for the period 1995-1999, which is yet to be finalized, reiterates the second, third and fifth objectives of the previous plan, but no longer mentions production increases or increased employment opportunities as targets.

Instead, the plan wants to contribute to the improved efficiency of the fishing industry, to provision of better infrastructure and to the re-habilitation of the fishing industry in the north and east of Sri Lanka.

1.2 Aquatic resources and investments envisaged

- Present levels of exploitation of aquatic resources

Based on surveys conducted by the FRITJOFT NANSEN, the National Fisheries Development Plan 1990-1994 estimated the annual sustainable yield within the continental shelf, which is the resource available to coastal marine fisheries, as 250,000 tons, while the off-shore resources within the Sri Lankan Exclusive Economic Zone have recently been estimated by exploratory surveys as 70,000-90,000 tons.

While the fisheries development plan assumes that there is scope to increase production from capture fisheries, it also acknowledges the fact that there is over-utilization of certain fishing methods and fishing gears in some parts of the country which has resulted in over-exploitation of aquatic resources.

Over-exploitation has occurred in certain inshore fisheries, e.g shrimp trawling, purse seining and drift gillnet fishing, in parts of western and southern Sri Lanka.

Still being considerably below the above estimates of the annual sustainable yield from marine capture fisheries, marine fish production further increased between 1992 and 1993, mainly through increased off-shore and deep-sea catches (from 22,000 tons to 33,000 tons) but also through increased coastal catches (from 163,168 to 169,900 tons). While the production forecast for 1993 by the coastal fisheries sector has been over-achieved by 3,898 tons, the production from off-shore fisheries was 9,500 tons short of the target set in the national fisheries development plan even though considerable achievements had obviously been made between 1992 and 1993.

The fish production in Sri Lanka by sub-sectors (1960-1993) is shown in Annex I.

- Type and magnitude of investments envisaged

According to the policy perspectives of the Government of Sri Lanka and in accordance with the 5-Year Fisheries Development Plans described in the previous chapter, the country's ability to increase and sustain domestic fish production depends upon:

- (i) the development of its offshore fisheries;
- (ii) the reduction of pressure on its coastal and in-shore fishing grounds through the implementation of fisheries resource management and monitoring programmes; and
- (iii) through the provision of support and incentives to the private sector.

In accordance with these perspectives, a strategic shift in public investment is envisaged away from financing fishing vessels and fishing gear towards financing fish landing and marketing infrastructure.

The public sector is not expected to undertake any new commercially oriented investments or expand any on-going commercial ventures. Commercial investments, such as investments in fishing craft, gear, fish farms, ice plants, cold storage, boatbuilding yards and repair workshops, fish processing plants, fish transportation and marketing facilities are to be undertaken by the private sector.

The public sector is to concentrate on construction and maintenance of physical infrastructure as well as on fisheries research, training and extension.

In line with these policies, most of the assets of the Ceylon Fisheries Corporation and the Ceylon Fishery Harbour Corporation, including ice plants, cold storage, workshops, slipways have been leased out to the private sector. The fishing gear manufacturing enterprise of the Ceylon Fisheries Corporation has been transformed into a private company.

During the 5-year plan period 1990-1994, many of the shore-facilities and services provided formerly by the Ceylon Fisheries Corporation and the Ceylon Fishery Harbour Corporation were successfully privatized.

While there is no official document which lists the planned investments to be undertaken by the public and private sectors during the period 1990-1999 in quantitative and qualitative terms, a projection has been prepared by the Ministry of Fisheries as an accompanying document to the draft 5-Year National Fisheries Development Plan 1995-1999. The projection includes the biggest external investment project i.e. the Fisheries Sector Project, funded by the AsDB.

The investments to be undertaken by the public and private sectors during 1993-1999 are shown below:

Investment (Investor)	Amount (Sri.Rs. mill.)
1. Fishing harbours, anchorages, coast protection (public sector)	1,683
2. Fishing craft and engines (private sector)	1,063
3. Fish marketing/processing (private sector)	665
4. Shrimp/fish culture (private sector)	401
5. Fisheries research (public sector)	342
6. Micro-enterprise development (private sector)	300
7. Fishing gear (private sector)	296

8.	Fisheries management and regulation (public sector)	239
9.	Fishermen's welfare (public sector)	190
10.	Training and extension (public sector)	111
		<u>5,290</u>

As indicated in the table, the private sector is expected to operate and invest in fishing craft and engines, fishing gear, fish marketing and processing, shrimp/fish culture and farming as well as in micro-enterprises. These investments account for approximately Rs. 2,725 million, or 52 percent, of the total projected investment. The private sector investment depends heavily on the supply of credit, both institutional and non-institutional.

Other investments, such as investments in infrastructure development, fisheries management, fisherfolk welfare, training and extension, as well as for fisheries research, are being made by government institutions, such as the Ministry of Fisheries and the National Aquatic Resources Agency (MARa).

A classification by type of investment indicates that the most important single area of investment is the rehabilitation and development of infrastructure directly related to fishing, such as fishing harbours and anchorages. Large investments are required in this field, since these infrastructure facilities have been largely neglected in the past and not properly maintained and serviced, primarily because of lack of funds. Physical infrastructure development and rehabilitation accounts for Rs. 1,683 million, or nearly a third of the total investment outlay of the fisheries sector.

The second most important category of investment in quantitative terms are investments in fishing craft and engines to be undertaken by the private sector. These investments are directly related to fisheries management and resource conservation since they support the relocation of fishing effort, namely the promotion of 'multi-day', deep sea fishing to be undertaken through the introduction of larger fishing boats.

The total investment in fishing vessels, engines and fishing gear is envisaged as Rs. 1,302 million, which accounts for approximately a quarter of the total investment in the fisheries sector envisaged for the period 1993-1999.

This category of investment also includes the conversion of existing boats to 'multi-day' boats by installing insulated fish/ice holds and navigational and safety equipment. Approximately Rs. 760 million, or about 14 percent of the total fishery investment for this period, are envisaged to be spent on this.

The third most important category of investment is envisaged for fish marketing, processing and storage, which accounts for about 13 percent of the total investment.

Fish marketing and processing has recently been given higher priority as a result of increasing quality consciousness of local consumers of fish and the expansion of the marine products' export sector, and because of increased opportunities to add value to aquatic products and earn foreign exchange by further processing and using better methods of packaging.

The equipment and technologies to be financed under this category include ice making equipment, cold storage and freezing equipment, fish transport vehicles, as well as fish processing facilities.

Shrimp/fish culture is expected to attract Rs. 401 million, or 8 percent of the total fisheries investment for 1993-1999.

Altogether, fisheries research, training, extension and management are expected to attract Rs. 692 million of investment, or 13% of the total investment, which will include a comprehensive survey of fishery resources in the Sri Lankan EEC outside the continental shelf.

Generation of alternative employment opportunities outside the fisheries sector for members of fishing communities as a means to increase incomes and living standards and to ease pressure on already heavily exploited coastal aquatic resources has been accorded high priority as part of national poverty alleviation and fisheries management strategies.

In addition to already existing projects, a micro-enterprise development programme for fishing communities is being implemented as part of the AsDB-funded Sri Lanka Fisheries Sector Project and is expected to result in a total investment of about Rs. 300 million, or about 6 percent of the total investment in the fisheries sector for the period 1993-1999. Another Rs. 190 million, or 4 percent of the total fishery investment in Sri Lanka envisaged for 1993-1999, are envisaged for social welfare programmes for fishing communities.

Fishing community development programmes in Sri Lanka also include special programmes aimed at enhancing the social and economic role of women in fishing communities.

The establishment of a large number of new village-based, primary cooperative societies during the 5-year plan period, which encourage women to become full members, also plays an important role in raising the standard of living of fishing communities in Sri Lanka and in increasing their role in community-based fisheries management.

1.3 Fisheries management measures

While the need for fisheries management is being recognized by the Government of Sri Lanka and assistance is being sought to design and introduce appropriate management systems, open access to coastal fisheries still prevails in Sri Lanka.

However, a number of fisheries management measures have already been introduced, such as regulations to restrict or prohibit the use of certain fishing methods in certain areas.

Trawling, for example, has been restricted in Negombo and Chilaw. As a result of conflicts between operators of beach seines, beach-seine fishing regulations were introduced in 1985. A year later, purse seine regulations were introduced, limiting the number of units of purse seines which can be operated in a specified area, and the Government now levies a resource fee to limit the number of entrants into the purse seine fishery.

In the past, all these management measures were implemented using conventional top-down approaches, while more recently the orientation of the Government has changed from community-based, self-regulatory approaches to resource management, conservation and environmental protection.

Pilot community-based management programmes are being implemented in various villages, among others, in Chilaw for community-based management of bottom trawling, and in Wathuregama for community based management of beach seine fishing.

It is believed that community-based management of fisheries offers an opportunity to improve the conservation of fish resources in inshore areas, also because the Government does not have the means to enforce regulations which apply to more than 1,800 km of coastline and to more than 100,000 fishermen.

In order to enable and also to motivate fishermen and women to actively participate in community-based fishery management practices, there is a need to provide credit for diversification of fishing effort, alternative self employment activities and other management related purposes. There is also a need for social welfare measures and provision of social, health and other community services.

1.4 Source of funds and the role of institutional credit

The public sector investments mentioned above are now and will in the future be undertaken using the Government's annual budgetary allocations to the Ministry of Fisheries which include a considerable amount of foreign assistance, including grants.

In the field of fisheries management, the investments are largely supported by UNDP, while in other fields, including infrastructure development and research, funds provided by the AsDB are being and will be used in the future.

Commercial credit from local financial institutions is not being and will not in future be used for public sector investments. Institutional credit from local banks, however, will have a very crucial role to play with regard to enabling the private sector to undertake its investments. Given a proper investment climate, the magnitude of these investments, will be determined by the attitude of the banking sector towards fisheries projects.

The National Fisheries Development Plan 1990-1994, however, does not provide any specific details with regard to institutional credit arrangements for the fisheries sector, such as the institutions to be involved, applicability of interest rates, or other lending norms. This

is to be seen in the context of the fact mentioned that institutional credit from local financial institutions should only be used for private sector investments in which the Government plays no direct role.

The lack of reference to specific institutional arrangements with regard to institutional credit in the National Fisheries Development Plan is also to be seen in the context of privatization and liberalization of financial markets and institutions in Sri Lanka which are described in chapter 2 below.

The National Fisheries Development Plan, however, does contain a policy statement with regard to credit for the fisheries sector in Sri Lanka which focuses attention on some of the constraints to fisheries credit in the past and the measures which are presently being taken and are proposed to resolve the problems. These measures are described in detail in chapter 4.1 below.

The Ministry of Fisheries has stated its willingness to provide technical and other support services to lending institutions before loans are granted and also to assist in loan recovery.

- Role of foreign investment

One of the important new policies of the Government with regard to investment is that foreign investments are actively encouraged.

Under this policy, the Board of Investment of Sri Lanka and the Ministry of Fisheries and Aquatic Resources Development have attempted to attract foreign investment primarily in the areas of off-shore and deep-sea fisheries, culture and farming of aquatic products, processing of fish and aquatic products, as well as in boatbuilding and the manufacture of fishing gear.

An analysis of approvals given by the Board of Investment for the establishment of fisheries and fisheries-related enterprises during the period January 1991 to August 1994, shows that of the 47 private enterprises which were approved during this period, only 16 enterprises were based on foreign investment. Ten of these enterprises dealt with prawn farming and other types of aquaculture, with a total investment volume of Rs. 358 million, while six enterprises were fishing and fish processing enterprises, with a total investment volume of Rs. 456 million.

It is believed that once the political situation on the east coast of Sri Lanka returns to normal, opportunities for foreign investment in aquaculture will increase considerably. It is also believed that there is further scope for foreign investment in off-shore fishing.

2. RECENT CHANGES OF THE RURAL CREDIT SCENARIO IN SRI LANKA

In the past, the Central Bank of Sri Lanka has attempted to streamline the rural credit system and to improve the performance of the delivery channels through the creation of new institutions, such as the Regional Rural Development Banks and through expansion and diversification of the rural credit portfolio of the banking system.

Some measure of success has been achieved both in the volume of credit flowing to the rural sector, including the fisheries sector, and in the diversification of the rural credit portfolio.

The Central Bank of Sri Lanka has also paid attention to innovative measures designed to lower transaction costs to borrowers and financial institutions, to bring interest rates in line with prevailing market rates, and to secure the participation of NGO's and other private intermediaries.

However, because of prevailing Government policies, only limited success has been achieved in bringing interest rates in line with market rates.

Again, because of Government policies, particularly related to the selection of borrowers and to linkage of loans to capital subsidies, capitalization and loan recovery of public sector financial institutions has not been satisfactory and financial resources have not always been allocated in an efficient manner. This applies to lending activities in general and not only to agricultural and fisheries lending. Factors relating to lending to the fisheries sector are elaborated on in detail below.

Over the last couple of years, however, the role of the Central Bank of Sri Lanka with regard to policy guidance, direction and monitoring of rural credit and fisheries credit has been considerably reduced in line with the economic liberalization and privatization processes described above.

As a result of reforms of the economic and financial sector which were undertaken to improve the financial viability of the financial sector, the Central Bank no longer provides guidance and refinance for banks extending rural credit nor do banks extending rural credit report their operations to the Central Bank. The same applies to the Regional Rural Development Banks which previously came under the direct control of the Central Bank of Sri Lanka.

While the old institutional arrangements to direct and coordinate investment and credit in support of structural development policies for the rural and agricultural sector, including the fisheries sector, are being abandoned, the field of agricultural, fisheries and rural credit is increasingly left to the 'free play of market forces', i.e. according to demand and profitability.

However, since small and medium-scale agricultural and fishery activities will continue to account for a substantial share of the GNP in Sri Lanka, financial institutions, and particularly the ones with branch networks in rural and coastal areas, might wish to continue to cater to the agricultural and fisheries sector, including the small and medium-scale operators.

With considerably reduced guidance and financial support from the Central Bank, public sector financial institutions, such as the Bank of Ceylon and People's Bank, which handled the bulk of rural and small-scale credit in the past, will have to expand their sources of funds and to consolidate their expertise and procedures for the conduct of successful

agricultural and fishery credit operations. Examples of how this can be done do exist in Sri Lanka in the lending operations of the Bank of Ceylon and are described in chapter 4.

Privatized development finance institutions, such as the Development Finance Corporation of Ceylon (DFCC) and the National Development Bank (NDB), already provide long-term loans for medium- and large-scale fish processing and shrimp culture and the DFCC has recently started to extend medium-term loans for coastal and 'multi-day' fishing boats and has met with a considerable demand. The corporation has employed competent technical staff who previously worked with the Ministry of Fisheries to expand its lending operations for marine capture fisheries.

In addition to disbursing credit, institutions such as NDB and DFCC also provide advice and finance consultancies and feasibility studies for aquaculture and fish processing and even grants to clients for this purpose.

The policy and other changes described above have been strongly supported and partly initiated by international financial institutions and development agencies, such as the International Monetary Fund, the World Bank, the AsDB, and USAID.

Private or privatized financial institutions, such as Hatton National Bank, Seylan Trust Bank and Sampath Bank, also function as financial intermediaries in lines of credit which support specific development projects and investment programmes, such as the Small and Medium Industry Loan Scheme, funded by the World Bank, which also includes investments in the fisheries sector, and the Fisheries Sector Project funded by the AsDB.

To date, however, the private financial institutions have availed only of limited experience in lending to small- and medium-scale fisheries and are in need of considerable technical assistance if they are to carry out the task successfully.

In this context, the recently completed FAO/BOBP assisted pilot credit scheme for fisherfolk in Sri Lanka, the implementation of which, through the Bank of Ceylon, is reviewed below in chapter 4.1.1, provides examples as to how institutional credit can be provided in a need-oriented and financially viable manner.

3. POLICIES OF INTERNATIONAL LENDING AGENCIES AND DONORS WITH REGARD TO INVESTMENT/CREDIT AND FISHERIES MANAGEMENT

The major donors which have been involved in the fisheries sector of Sri Lanka in the recent past, are the AsDB, UNDP and the FAO-executed Bay of Bengal Programme for Fisheries Development. The projects and programmes funded by these donors all have a major focus on fisheries management.

In the case of public and private sector investment, the Sri Lanka Fisheries Sector Project financed by the AsDB is supporting the implementation of two important fisheries management measures, i.e. the privatization of fishery infrastructure and facilities and the creation of employment opportunities outside the fisheries sector.

The AsDB is providing loans and grants to the private sector for the improvement and rehabilitation of some of the infrastructure and facilities which are required for the operation of off-shore fishing boats and which were previously operated by the Ceylon Fisheries Corporation and by the Ceylon Fishery Harbour Corporation and privatized during the period 1990-1994.

Furthermore, the AsDB Fisheries Sector Project promotes micro-enterprises through credit support and technical assistance to the private sector in order to help fishermen and fisherwomen to diversify into on-shore economic activities of a self-employment nature with the ultimate objective of reducing and alleviating poverty in coastal areas and of reducing the pressure on already heavily fished aquatic resources.

A particularly noteworthy aspect of fishery credit programmes in Sri Lanka, which has a potentially strong impact on fisheries management, is that the micro-enterprise development programme supported with credit from the AsDB as well as similar credit programmes for fishing communities funded by local banks, contributes directly to strengthening the co-operative societies which will play a crucial role in the implementation of community-based management measures.

Other important non-credit management related components of the assistance provided by the AsDB includes an aquatic resources survey which is expected to result in a better understanding of the status of aquatic resources in the off-shore areas of the EEZ and of management related issues, such as the interaction between the coastal fishery and the off-shore fishery and the possibility to further diversify existing fisheries in order to ease pressure on heavily exploited stocks.

The training programmes envisaged under the Sri Lanka fisheries sector programme are to a large extent management oriented and include dissemination of information on resource issues, such as conservation, use of resource-friendly fishing methods, etc. Training programmes for crews of off-shore fishing boats in navigation and safety aspects are also management related as they help to divert fishing pressure away from heavily exploited in-shore resources.

As far as on-lending national financial institutions are concerned, referred to as PCI's or participating credit institutions, the loan scheme of the AsDB which commenced only recently, is being coordinated by the National Development Bank (NDB), which has been recently privatized. NDB is seeking the cooperation of four commercial banks, seven Regional Rural Development Banks and several NGOs which are identical with fisheries cooperative societies.

The participating credit institutions have to fulfil the following, rather strict, criteria:

- a) Have two years' experience of lending to the fisheries sector.
- b) Loan recovery in relation to total loans falling due should be at least 70 percent.
- c) Should maintain appropriate debt-equity ratio and have adequate provision for bad debts.

- d) Have adequate accounting and financial reporting procedures.
- e) Use waiver of conventional collateral requirements, operate savings programmes, have group lending approach.

It remains to be seen whether the AsDB will get the required cooperation.

UNDP funds a FAO-executed technical assistance project which is helping the Government to establish a fisheries management unit, to carry out pertinent studies and training programmes and to develop appropriate policies and strategies. However, the programme has no credit and investment component of its own.

The FAO Bay of Bengal Programme has provided technical assistance for improving the delivery system for fisheries credit in order to give it a market orientation and improve utilization and repayment. It focused particularly on management related issues, such as supporting alternative income-generating activities and diversification of fishing effort. It is described in detail in the following chapter.

4. ON-GOING AND PLANNED CAPTURE AND CULTURE FISHERY CREDIT PROGRAMMES IN SRI LANKA AND THEIR SUITABILITY FOR MEETING THE REQUIREMENTS OF THE NATIONAL FISHERIES DEVELOPMENT PLANS AS WELL AS THE NEEDS OF FISHERY MANAGEMENT

4.1 Assessment of the performance of past and on-going fishery credit programmes in terms of loan recovery and disbursement, economic impact and exploitation/conservation of natural resources

4.1.1 FAO/BOBP assisted Pilot Credit Scheme for Fisherfolk

In 1987, the Ministry of Fisheries and Aquatic Resources (MFAR) requested the FAO Bay of Bengal Programme (BOBP) for assistance to formulate and implement, on a pilot basis, a non-subsidized credit scheme for small-scale fisheries and for other economic activities of the marine fisherfolk. The MFAR particularly sought the BOBP's assistance, because it had successfully designed and implemented a fisheries credit project in the early eighties in the state of Orissa, India.

The project aimed at providing comprehensive banking services to the fishing community through the introduction of need-based lending schemes incorporating the principles of simplicity, timeliness and flexibility, in order to increase operational efficiency and profitability of fisheries, as well as non-fisheries economic activities undertaken by members of coastal fishing communities, and to facilitate the management of incomes/earnings within the economic units of the fisherfolk families by inculcating saving/thrift habits through linking credit with savings.

A copy of the circular which guided the implementation of the pilot credit scheme in the Bank of Ceylon and which describes area and period of operation, target group of borrowers, as well as terms and conditions of lending is attached as Annex II.

The Bank's normal interest rates were applied and no capital subsidy was linked to the loan amount.

In accordance with the original agreement between the participating banks and MFAR, loan disbursements under the pilot scheme had been made over a period between early 1992 and the end of 1993.

The Bank of Ceylon participated in the scheme with 16 branches in the districts. The bank used strictly its own funds rather than funds from the Central Bank of Sri Lanka or from international lending agencies such as the World Bank.

Under the pilot scheme, 214 loans were made and the total amount disbursed was Rs. 6,535 million (1 US\$ = 49 SRL Rs.). By the end of March 1994, Rs. 3,441 million was due for recovery, out of which Rs. 3,209 million had actually been recovered according to schedule (93 percent). Rs. 4,905 million were outstanding. These figures refer to the recovery of the loan principal. Figures on recovery of loan interest are recorded separately and were not readily available at the time of my visit to the head office of Bank of Ceylon.

Representatives of the Bank were satisfied with the utilization of the loans and with their economic impact in terms of generation of income and employment. They were particularly satisfied with the high rate of loan recovery which they attributed to the need-oriented lending programme prepared in close consultation with the fishing communities residing in the districts where the scheme was implemented.

The target group of the credit programme consisted of self-employed traditional fishermen, owners of small mechanized craft, fishing labourers and youth, and of female members of fisherfolk households. The activities financed included a wide variety of fisheries and non-fisheries activities as well as consumption of debt and debt redemption. Annex II gives a complete list of the investments and activities for which a loan could be obtained under the scheme.

The high rate of loan recovery can be attributed to efficient procedures for appraisal of loan applications and monitoring of loan use; quick processing of loan applications; timely loan disbursements; realistic loan recovery schedules; and to training of bank officers and efficient cooperation between bank and fisheries officers.

The demand for loans under this scheme was less than anticipated, because the Government again introduced subsidized credit programmes for members of fishermen's cooperatives at the same time as the pilot scheme was implemented.

In future, however, subsidized credit is unlikely to continue which is why the demand for need-oriented, timely and flexible credit facilities as provided under the pilot scheme should increase, particularly since management measures are going to be introduced which necessitate diversification of fishing effort, modification of fishing craft, introduction of different types of fishing gear and alternative income-generating employment opportunities.

In addition to management related credit needs, there is a growing demand for replacement investment in fishing craft because of the age structure of the fishing fleet, even though some fisheries will continue at lower catch levels than at present.

4.1.2 Fishery Credit Operations of Bank of Ceylon

Annex III shows the statistics of the various fisheries credit schemes implemented by the Bank of Ceylon from 1977 up to the present in terms of number of loans granted, amount disbursed, amount due for repayment, amount of principal recovered, recovery percentage and amount outstanding. Annex VI briefly describes the operational characteristics of the various schemes.

According to the year of implementation, the table in Annex III divides the fishery credit schemes which have been implemented by Bank of Ceylon into three groups:

1. Three lines of credit which were implemented between 1977 and 1982 and which consist of one genuine fisheries credit scheme and of the fisheries related activities financed under two general rural credit schemes (Self Employment I and Cyclone Rehabilitation);
2. 11 lines of credit which were implemented between 1983 and 1993 and which consist of eight genuine fisheries credit schemes and of the fisheries related activities financed under two general rural credit programmes (Self Employment II, Grama Sewaka Scheme, Small and Medium Industry Loan Scheme - SMI);
3. Six lines of credit consisting exclusively of fisheries activities financed under general rural credit programmes which were implemented from 1991, of which three schemes are still on-going.

When comparing the first and the second group of lines of credit, it becomes obvious that recovery of loans to the fisheries sector has considerably improved since the early eighties. While the recovery percentage of the principal of loans disbursed between 1977 and 1982 was merely 41 percent, the recovery percentage improved to 91 percent for fishery loans disbursed between 1982 and 1993.

In group three, which comprises mainly recent loans for income generating activities in fishing communities in the context of rural development and poverty alleviation programmes, rather than loans for capital investments in capture fisheries, marketing and processing, repayment is again lower, i.e. 73 percent, which is particularly due to poor loan repayment (34 percent) under the politically motivated Janasaviya credit scheme and under other similar schemes which are sometimes perceived as classic Government sponsored social welfare programmes.

When looking at the lines of credit in group two, it is interesting to note that most of the schemes under which credit was and is available for genuine production and production related investments in the fisheries sector, i.e. schemes 2, 3, 7, 9, 10, 11 and 14, had loan repayment rates between 93 and 100 percent.

The lending procedures described in Annex III and the operational features of credit schemes with high loan repayment rates, when compared to credit schemes with low loan recovery rates, have the following characteristics in common:

- They are demand and need oriented and not supply oriented.
- Borrowers approach the financial institution out of their own interest and not because they have been identified and selected by a politically legitimised committee to be eligible for a capital subsidy or for social welfare.
- Non-subsidized credit scheme.
- Where case capital subsidies are involved, they are not disbursed up-front but kept as collateral or borrower equity until the loan is fully repaid.
- Careful economic and financial appraisal of investment.
- Realistic repayment schedules based on properly prepared cash flow projections.
- Selection of borrowers based on interest and ability of borrower to manage investment efficiently.
- Timely and quick processing of loan applications and disbursement of loans.
- Regular monitoring of loan use and repayment.
- Efficient arrears control.
- Adequate training of bank staff.
- Efficient cooperation with the fisheries department in the preparation of lending programmes, feasibility studies of investments, and monitoring of loan use.

These features are almost identical with those of the FAO/BOBP assisted credit scheme. This is due to the fact that the terms of lending and lending procedures of the FAO/BOBP assisted credit scheme were based on the conclusions of a study of failures and shortcomings of past fisheries credit programmes in Sri Lanka.

The above review indicates that there are examples in Sri Lanka of how to disburse and recover fisheries credit successfully. For the future, it is strongly recommended to integrate the successful lines of credit operated by one financial institution - in this case the Bank of Ceylon - into one single fisheries credit scheme, possibly similar to the FAO/BOBP assisted one. This would have the following main advantages:

- More efficient and cost-efficient coordination, management and monitoring of the scheme.

- Greater scope for a continuous and timely adjustment of the scheme to resource conservation and fishery management requirements.
- 4.2 Appropriateness of institutional fisheries credit programmes in Sri Lanka for fisheries management needs

From the review of past and on-going credit programmes of national financial institutions for the fisheries sector in Sri Lanka, it is concluded that in the past some credit programmes for in-shore fishing craft which were linked to capital subsidies have contributed to the full and sometimes over-exploitation of coastal aquatic resources in western and southern Sri Lanka.

Because of credit linkages to capital subsidies and shortcomings in the procedures for selection of borrowers and appraisal of loan applications and monitoring of loan use, recovery of loans and financial viability of many lending programmes has not been satisfactory.

More recent fishery credit schemes, however, which were not linked to capital subsidies, and in which national financial institutions played a greater role in identification of borrowers and supervision of loan use, have demonstrated how institutional credit can be provided to the fisheries sector, including artisanal fisheries, on a financially viable and sustainable basis and in a demand driven and market-oriented way for a variety of purposes, included management related ones, such as the facilitation of diversification of fishing effort from heavily exploited in-shore resources to under-exploited off-shore resources, promotion of alternative income generating economic activities outside fisheries, manufacture of value added fishery products, etc.

In a market oriented, demand driven macro-economic environment where national financial institutions are supposed to use their own financial resources for lending, the demand for credit for management related fishery related investments needs to be articulated not just by individual fisherwomen and fishermen but in a nationally coordinated way.

Fishermen's cooperatives or associations should play an active role in the formulation of fisheries management regulations, in their adaptation to local conditions, and in the monitoring of their implementation and their impact.

Together with the fisheries administration, they need to articulate a demand for management related credit inputs *vis-a-vis* national financial institutions and also to contribute to credit programmes by means of collateral, equity contributions, assistance in supervision of loan use, etc.

In order to facilitate the availability of institutional credit for management related investments, there is an urgent need for the fisheries administration to keep national financial institutions informed on the fisheries management regulations which are presently in force and on how they affect fishing technologies, investment requirements and economic returns.

Also, there is a need to keep banks informed on future plans and envisaged and forthcoming changes with regard to fishery management regulations. A continuing dialogue

between the fisheries administration, fisheries cooperatives/associations and financial institutions is needed to successfully promote institutional credit for fisheries management related investments.

It is proposed to closely monitor the consequences of the liberalization of financial markets, described above, and the implementation of fisheries management measures for the quantity and quality of fishery credit in Sri Lanka.

Technical assistance will be needed in the future to adapt institutional credit programmes to management related investment requirements. For a truly demand oriented, community based approach, a participatory definition of credit needs is essential in which fishing communities and their organizations will have to play an active role.

FISH PRODUCTION BY SUB - SECTORS (1960-1993) IN METRIC TONS

YEAR	TOTAL FISH PRODUCTION	MARINE FISHERY		INLAND FISHERY
		OFFSHORE & DEEP SEA	COASTAL	
1960	52527	2235	48788	1524
1965	95301	1524	85547	8230
1970	98152	3258	86563	8331
1975	120140	970	114883	13307
1980	187878	2148	165284	20266
1985	175409	2400	140288	32743
1990	183056	3400	144266	35390
1987	160002	4250	149278	36465
1988	197536	4425	155099	38012
1989	205286	8155	157411	39720
1990	177063	11866	134132	31265
1991	190063	15060	150151	29032
1992	206188	22000	163188	21000
1993	220000	33000	169000	18000

SOURCE: - MINISTRY OF FISHERIES & AQUATIC RESOURCES

Bank of Ceylon Circular for Pilot Credit Scheme for Fisherfolk
under FAO/BOBP Fisheries Credit Project

1. INTRODUCTION

1.1 Background

On a request made by the Ministry of Fisheries and Aquatic Resources (MFAR), the Bay of Bengal Programme (BOBP), a regional FAO fisheries programme that covers seven countries bordering the Bay of Bengal, has formulated a project entitled "Fisherfolk Credit in Sri Lanka".

1.2 Objective of the Project

The objective of this project is to provide a comprehensive banking service to the fisherfolk community by facilitating the timely availability of financial resources through the introduction of a need-based lending scheme incorporating the principles of simplicity, timeliness and flexibility, in order to:

- (a) Increase the operational efficiency and profitability of fisheries and non-fisheries economic activities undertaken by coastal fisherfolk; and
- (b) Facilitate resource management within the economic units of the fisherfolk families by instilling savings/thrift habits through linkage of credit with savings.

1.3 Formulation and Scope of the Fisherfolk Credit Scheme

1.3.1 In keeping with the objective of the project a comprehensive credit scheme entitled "Pilot Credit Scheme for the Fisherfolk" has been formulated by a special committee appointed for this purpose. This committee comprised two officials each from BOC, PB, CBSL and MOFAR.

1.3.2 The proposed BOBP credit scheme is broad-based to the extent that it attempts to cover the entire gamut of credit needs of fishermen and their families including capital investment, working capital, acquisition/enhancement of assets, debt redemption and consumption.

1.4 Participating Credit Institutions

Bank of Ceylon (BOC), People's Bank (PB), and Regional Rural Development Banks (RRDBs) will undertake to lend under the project.

- 1.5 The Board of Directors has approved the above Credit Scheme with an allocation of Rs. 93.54 million to be implemented on the following basis:

2. AREA AND PERIOD OF OPERATION

The pilot credit scheme will be implemented in the coastal areas of the districts of Puttalam, Galle and Matara, for a period of two years commencing 1991. The following coastal branches in the said districts have been identified for disbursement of credit under the project:

DISTRICT	BRANCHES	
Puttalam	1. Kalpitiya	5. Madampe
	2. Puttalam	6. Nattandiya
	3. Madurankuliya	7. Wennappuwa
	4. Chilaw	8. Waikkal
Galle	9. Bentota	11. Hikkaduwa
	10. Ambalangoda	12. Galle Bazaar
Matara	13. Weligama	15. Devinuwara
	14. Matara Bazaar	16. Dickwells

3. TARGET GROUP OF BORROWERS

The Credit Scheme is targetted at fisherfolk particularly the following small-scale groups:

- 3.1 Self-employed traditional fishermen.
- 3.2 Owners of small mechanized craft.
- 3.3 Fishing labourers and youths.
- 3.4 Women members of fisherfolk families.

4. IDENTIFICATION OF BORROWERS

- 4.1 Ordinarily, prime consideration is given to commercial feasibility of projects when identifying borrowers. However, under this project, it is considered that commercial feasibility alone would result in the exclusion of the poor and socially non-influential sections of the society. Hence, due weight should also be given to accommodate the underprivileged and the needy.

- 4.2 Although the Bank will be free to select the beneficiaries, the recommendation of village-level fisheries cooperative society/Fisheries Inspector (FI)/District Fisheries Extension Officer (DFEO), should be obtained.

5. ELIGIBILITY CRITERIA

- 5.1 Should be a member of a fisher family and a resident in a fishing village.
- 5.2 Should have maintained a savings account for at least three months prior to release of the loan, with a minimum balance of 1% of the amount of loan sought. This minimum balance should be maintained during the period of the loan.
- 5.3 Should be able to provide sufficient proof with regard to the ability and experience of the proposed activity to be financed.
- 5.4 Should be able to provide the minimum equity contribution under the scheme.
- 5.5 Should provide the bank with sufficient proof of income to repay the loan interest and instalments.
- 5.6 Should be able to provide adequate proof regarding marketing arrangements in the case of production-oriented ventures.
- 5.7 Should not have defaulted previous loans (if any) obtained from any credit institution.

NOTE: Prospective borrowers should be encouraged to apply for loans jointly with their spouses/female family members.

6. PURPOSE

The purpose for which credit facilities will be provided are classified under four broad categories:

- 6.1 Category 1(a) Land-based economic activities such as:
- i) Coastal capture fishing without the use of craft, e.g., cast netting and various other forms of lagoon fishing;
 - ii) Activities which support capture fishing, e.g., sale of diesel, kerosene, fishing gear and spare parts. Manufacture of traditional craft, repairs to boats, engines and fishing gear, retail sale of ice;
 - iii) Fishery-related activities, e.g., drying of fish, manufacture of maldivian fish, curing of wet salted fish (Jaadi), sale of fish;

- iv) Non-fishery related economically viable activities which supplement the income of fisherfolk families, e.g., mat/carpet weaving, carpentry, etc.

6.2 Category 1(b)

Consumption and debt redemption:

- i) Redemption of debt incurred for: productive purposes, consumption purposes, purchase of assets, others (natural disasters, sickness, etc.);
- ii) Consumption-related purposes such as: purchase of food provisions, etc., education of children, purchase of consumer durables, expenditure on festivals, pilgrimages, family functions, etc.

6.3 Category 1(c)

Acquisition/enhancement of assets such as: purchase of land, purchase/construction of house/upgrading of house, construction of wells/water supply, electricity connections.

6.4 Category 2

Purchase of individual components (hull, engine, gear) of the following types of craft used in coastal fishing:

- i) Outboard motorised traditional craft;
- ii) Non-motorised craft, e.g., Oru, Teppan, Vallan, Kattumaran, etc.;
- iii) Outboard motorised FRP craft.

6.5 Category 3

Purchase of craft as a package complete with engine and gear mentioned under para 6.4 (i), (ii) and (iii) above.

6.6 Category 4

Purchase of individual components (hull, engine, gear) or a package of the following types of craft:

- i) Inboard motorised craft used in coastal fishing;
- ii) Craft larger than 32 feet used in offshore multiday fishing.

NOTE: The capital investment as well as working capital requirements of projects undertaken by applicants may be considered for provision of credit facilities.

7. MAXIMUM CREDIT LIMIT AND EQUITY CONTRIBUTION

7.1 The maximum credit limit will be 75% of the total project cost subject to the following ceilings:

- (a) Land-based small-scale economic activities - Cat.1(a) - Rs. 25.000/=
- (b) Consumption and debt redemption - Cat.1(b) - Rs. 7.000/=
- (c) Acquisition/enhancement of assets - Cat.1(c) - Rs. 15.000/=

7.2 The equity contribution by the borrower will be 25% of the total project cost/cost of items to be purchased. Family labour, where applicable, would be considered as full or partial equity.

8. REPAYMENT PERIOD AND GRACE PERIOD

	<u>Type of Loan</u>	<u>Repayment Period</u>	<u>Grace Period</u>
8.1	Loans for income-generating activities (Project-oriented loans)(Cat.1(a), Cat.2, Cat.3, and Cat.4)	Will depend on the cash flow of the project subject to a maximum of 10 years	Maximum 6 mths
8.2	Other loans (Cat.1(b) and Cat.1(c))	Maximum 24 mths	No grace period

9. RATE OF INTEREST

	<u>Type of Loan</u>	<u>Rate of Interest per annum</u>
9.1	Category 1(a)	Rate applicable for facilities refinanced by Central Bank of Sri Lanka (CBSL) under medium and long term credit fund from time to time (presently 18% p.a.)
9.2	Category 1(b) and 1(c)	Bank's normal rate applicable for agriculture and fisheries activities from time to time (presently 21% p.a.)
9.3	Category 2, 3 and 4(i)	As per Para 9.1 above
9.4	Category 4(ii)	Rate applicable for facilities refinanced under SMI Loan Scheme by National Development (NDB) from time to time (presently 19.5% pa)

10. SECURITY

One or more of the following securities should be taken when granting loans under the scheme depending on the nature and the amount of the facility:

- 10.1 Mortgage of project assets and assignment of the insurance policy over project assets where feasible.

- 10.2 Mortgage or pledge over other immovable or movable assets where feasible.
- 10.3 Guarantee of a fisherman or an adult family member with a satisfactory repayment record on previous borrowings, may be considered for loans below Rs. 5,000/=.
- 10.4 Guarantee of a fisheries cooperative society or its office bearer(s) maintaining a satisfactory record with the Bank.
- 10.5 Guarantee of two persons acceptable to the Bank.
- 10.6 Any other security acceptable to the Bank.

ANNEX III

Bank of Ceylon's Fisheries Lending Scheme Statistics
as of 31.3.94

(Rs. million)

Scheme	No. of loans granted	Amount granted	Amount due	Amount recovered	Amount outstand- ing	Recovery percent- age
1. ADB 1st West Coast Fisheries Development Project (1977-78)	105	15.766	15.766	11.128	4.638	71%
2. Self Employment Scheme I (1978-82)	660	30.376	30.382	8.518	21.857	28%
3. Cyclone Rehabilitation Scheme (1981)	512	6.949	6.949	2.073	4.876	30%
SUB TOTAL	1277	53.091	53.097	21.719	31.371	41%
4. Self Employment Scheme II (1983-88)	154	24.483	22.107	20.609	3.874	93%
5. Cooperative Fisheries Lending Scheme (1983-88)	45	1.095	1.467	1.379	0.316	94%
6. "Madel" Fisheries Lending Scheme (1987-92)	38	2.477	2.339	1.762	0.735	76%
7. ADB 2nd West Coast Fisheries Lending Scheme (1985-88)	73	25.632	19.459	20.660	4.978	100%
8. Pilot Fisheries Lending Scheme (1987-90)	273	1.920	1.540	1.003	0.917	65%
9. Lending Scheme for Ice Holds (1987)	28	0.560	0.560	0.531	0.029	95%
10. Additional Loans - Replacement of Fishing Gear (1990)	13	0.461	0.432	0.411	0.051	95%
11. Without Subsidy Fisheries Credit Scheme (1988-present)	113	35.269	12.514	12.055	23.215	96%
12. Credit Scheme for Grama Sewaka Divisional Level Cooperative Societies - self employment	54	7.619	5.684	4.233	3.386	74%
13. S.M.I. Loans, Coops. (1991-ongoing)	71	50.565	18.257	14.198	36.366	77%
14. BOBP Credit Scheme (Puttalam Galle & Matsra District only (1992-93)	214	6.535	3.441	3.209	4.905	93%
SUB TOTAL	1076	157.222	87.900	80.030	78.772	91%
15. New Enterprises Credit Scheme for Self Employment (fisheries activities only) (1992)	1022	16.637	8.252	6.191	8.447	75%
16. Poverty Alleviation Credit Scheme (1991)	197	0.554	0.415	0.293	0.261	71%
17. Janasaviya Credit Scheme (fisheries activities only) (ongoing)	1071	14.265	8.662	2.928	11.337	34%
18. NYSCD Credit Scheme (fisheries activities only) (1993)	85	0.821	0.561	0.434	0.387	77%
19. General Loan Scheme (fisheries activities only) (ongoing)	110	10.918	5.645	4.424	6.495	78%
20. SMI Loan Scheme (fisheries activities only) (ongoing)	59	45.441	22.937	19.806	25.634	86%
SUB TOTAL	2544	86.636	46.472	34.076	52.561	73%
GRAND TOTAL	4897	296.949	187.469	135.825	162.704	72%

Please note that the figures of loan recovery refer to the recovery of principal of the loan and not of the interest

Operational Characteristics of Fishery Credit Schemes Implemented through Bank of Ceylon

1. ADB 1st West Coast Fisheries Development Project

Loans were given mainly for gillnetters of 28 feet length and combined with a capital subsidy, which covered 35 percent of the total capital investment while the remaining 65 percent was covered by credit. Borrowers were pre-selected by Government officials through allocation of the capital subsidies without which it was not possible to apply for a loan.

The target group consisted of fishermen's cooperatives and private companies. While cooperatives were charged 12.5 percent interest on a loan, private companies had to pay the market rates of interest. The loans were refinanced by the Central Bank of Sri Lanka.

Ten percent equity contribution was required from borrowers and the collateral consisted of hypothecation of the assets for which the loan was obtained. Other collateral, such as immovable property or third party guarantees, was not needed.

As can be seen from ANNEX II, loan recovery of principal was 71 percent and bank officers explained that while loans from fishermen cooperatives were almost fully recovered, loan repayment from the so-called private businesses was poor because of lack of capacity to operate and manage the fishing boats and because of wilful default.

2. Self Employment Scheme I (Fisheries activities only)

As in the previous scheme, loans were given to complement a capital subsidy which amounted to 35 percent of the total investment cost, while 65 percent of it was financed through credit. Under this rural credit scheme, loans and capital subsidies were provided to cooperatives and individuals for various types of fishing craft, engines and fishing gear at subsidized rates of interest.

Collateral was limited to hypothecation of the assets financed and an equity contribution by the borrower was not required. Borrowers were not selected by the bank but by representatives of the Ministry of Fisheries. Only 28 percent of the loan principal was recovered, mainly because of wilful default, mis-utilization of the loan, or because of lack of capacity to manage the fishing units.

3. Cyclone Rehabilitation Scheme (Fisheries activities only)

This scheme had the same features as the previous one and utilization and recovery of loans (only 30 percent of principal) has been similarly poor, very likely due to the same reasons.

4. Self Employment Scheme II (Fisheries activities only)

When compared to the first self employment scheme described above, which had an extremely poor loan recovery of only 28 percent, loan recovery under the fisheries component under the second self employment scheme reached a staggering 93 percent.

The main differences between this scheme and Self Employment Scheme I are that borrowers were exclusively selected by the bank, the capital subsidy portion was kept by the bank as collateral, while the capital investment was financed through credit and equity contribution of the borrower. The subsidy was only disbursed once the loan had been repaid fully. Another difference to the earlier self employment scheme was that borrowers had to make an equity contribution of 12.5 percent of the capital investment cost.

The scheme financed the acquisition of fishing craft and gear as well as the purchase of engines.

Eligibility to apply for a loan under the scheme was limited to *bona-fide* fishermen between 21 and 60 years of age with experience in operating the type of craft and gear he proposed to purchase.

Four types of collateral were required to obtain a loan under the scheme, i.e. mortgage for fishing boat; engine and gear; personal guarantee of two persons acceptable to the bank; assignment over fixed deposit created by subsidy from Ministry of Fisheries; and assignment over insurance cover of boat, engine, gear.

Repayment periods for the loan were 3 years for traditional fishing craft; 5 years for 17-23 footers and 8 years for 28-32 footers.

12.5 percent was charged as interest on loans which were refinanced by the Central Bank of Sri Lanka.

5. Cooperative Fisheries Lending Scheme

The Cooperative Fisheries Lending Scheme followed the same lending procedures as Self Employment Scheme II with the exception that the Cooperative Fisheries Lending Scheme catered to members of cooperatives rather than to individuals.

The recovery performance of the scheme was 94 percent recovery of the loan principal, which is almost identical to the rate of loan recovery in the previous scheme.

The following criteria were applied for eligibility:

- The co-operative society should have operated a current account with Bank of Ceylon for a minimum period of six months.
- The society should have deposited the proceeds of all co-operative society shares purchased by the members (share capital) into a savings/fixed deposit account with the Bank of Ceylon in the name of the co-operative society.

- The society should be registered with the department of cooperative development and be recommended by the Ministry of Fisheries to receive loans under the scheme.
- The society should not be a defaulter to the Bank of Ceylon or any other financial institution.

Collateral requirements included mortgage over boat, engine and fishing gear; deposit of certificate of registration of boat with Bank of Ceylon; assignment of insurance cover of boat, engine and fishing gear to Bank of Ceylon; deposit of entitlement to capital subsidy with Bank of Ceylon, as well as deposit of passbook of savings account and/or certificate of fixed deposit of share capital with Bank of Ceylon.

Repayment periods, interest rates and refinance were identical with the arrangements described under the previous scheme.

6. "Madel" Fisheries Lending Scheme

Under this scheme, loans were extended for acquisition and repair of traditional beach seines and fishing craft used for their operation.

Loans were disbursed without capital subsidy and at a rate of interest of 12.5 percent. The loans were refinanced by the Central Bank of Sri Lanka.

The loan consisted of a term loan to be repaid over a period of three years and an overdraft facility to be repaid within a year. There was a grace period of three months.

Borrowers were required to contribute 15% of the loan amount as equity and 20 percent of the overdraft.

The following eligibility criteria were applied:

- Applicants should possess a valid Madel permit licensed for the current year and issued by the Ministry of Fisheries.
- They should be between 21 and 60 years of age and physically fit.

The rate of recovery of loan principal was 74 percent. This might have been negatively affected by declining catches in the in-shore areas where this fishing gear is being used.

7. ADB 2nd West Coast Fisheries Lending Scheme

Under the Second Fisheries Lending Scheme funded by the AsDB, credit was extended to individuals and cooperatives under very similar lending procedures as under the successful schemes described under 4 and 5 above.

To date, loan principal is being fully recovered according to the agreed repayment schedules. Because of the fact that same instalments have not yet fallen due for repayment, less than 20 percent of the amounts disbursed are still outstanding.

8. Pilot Fisheries Lending Scheme

This line of credit was supported by the catholic church and targeted catholic fishing households in predominantly catholic villages. The bank used it's own funds for lending under the scheme, the purpose of which was to promote additional income generating activities for poor families in order to enhance their income.

Interest rates were subsidized and no collateral was required. The modest loan recovery rate of 65 percent can possibly be explained by the social welfare character of the scheme.

9. Lending Scheme for Ice Holds

This scheme had a satisfactory rate of loan recovery of 95 percent and supported the conversion of 28-32 foot fishing boats locally, also referred to as 3.5 tonners, to so called 'multi-day' boats by financing the installation of insulated ice-holds.

The following eligibility criteria were applied: Loan applicants to be the registered owner of the fishing vessel in which the ice hold was to be installed and should be in possession of the certificate of registration, current annual licence, and a valid marine insurance policy. They further should not be a defaulter of any bank.

While there was no capital subsidy involved, the borrower had to make a minimum equity contribution of 10 percent. The interest rate applied was flexible depending on the collateral which was offered by the borrower and on the prevailing rates applicable to the fisheries sector. Repayment was also flexible; the maximum repayment period, however, was 3 years.

Collateral requirements consisted of:

- a group guarantee of three borrowers (referred to as inter-se guarantee), where each of the three again had to provide a personal guarantor acceptable to the bank;
- mortgage of the fishing vessel;
- deposit of certificate of registration of fishing vessel and of marine insurance policy with Bank of Ceylon and assignment of insurance cover of fishing vessel to the bank.

10. Additional Loans - Replacement of Fishing Gear

Under this scheme, additional loans were provided to borrowers already covered under schemes 4 and 5. The same lending procedures were followed and the loan recovery was again very satisfactory: 95 percent.

11. "Without-Subsidy" Fisheries Credit Scheme

This is another on-going scheme where loans are being fully recovered, even though most disbursements have not fallen due for recovery yet. In the absence of capital subsidies and refinance which were previously provided from the Government of Sri Lanka, under this scheme the Bank of Ceylon continues to promote self-employment in the fisheries sector earlier promoted under the self employment schemes described under schemes 2,4 and 5 above, by using their own funds.

The investments which are being financed under this scheme are as under the earlier self employment schemes fishing craft and gear, i.e. traditional fishing craft, engines and gear; 17-23 feet long fibreglass boats, engines and gear and 32-38 feet long fibreglass boats, engines and gear.

Loans are provided both to individuals and members of co-operative societies fulfilling the following eligibility criteria:

- permanent resident of the area;
- have adequate capacity and experience to operate/manage fishing unit;
- have adequate repayment capacity considering also the projected cash flow of the proposed economic activity;

For co-operative societies, the same eligibility requirements apply as described above under scheme 5.

As far as collateral is concerned, arrangements are more strict than under the previous self employment schemes. They include the following:

For co-operative societies, other societies and groups of borrowers:

- i) mortgage over fishing craft, engine, gear;
- ii) assignment of insurance policy of fishing vessel, engine, fishing gear;
- iii) "inter-se" guarantee of five persons, comprising skipper and crew of fishing unit financed by the bank;
- iv) deposit title deeds, together with a title report on immovable property (if any) owned by the members of the guarantors group with the option to mortgage the same;
- v) deposit of the certificate of registration of the fishing vessel with the bank;
- vi) deposit of savings account passbook or certificate of fixed deposit where share capital has been deposited with bank.

For individual borrowers:

- i) personal guarantee of two persons acceptable to the bank
- ii) the securities listed above under items (i), (ii), (iv) and (v).

A rate of interest of 12.5 percent is being charged on outstanding loans. Traditional fishing units are being repaid over a period of 4 years, 17-23 feet long fibreglass boats are repaid over a period of 5 years, and the repayment period for 32-38 footers is 8 to 10 years. There is a grace period of two months before loans become due for repayment.

12. Credit Scheme for Grama Sewaka Divisional Level Cooperative Societies - Self Employment (Fisheries activities only)

Under this scheme, fisheries related and non-fisheries income generating economic activities of members of primary cooperative societies in fishing villages are financed. Until recently, loan disbursements had been refinanced under the Small and Medium Industry Loan Scheme of the World Bank.

A 35 percent capital subsidy is disbursed up-front and the remaining 65 percent of the investment cost is financed through the bank loan. Borrowers are pre-selected. These latter features might explain, as in schemes 2 and 3 described above, why loan recoveries stand only at a modest 74 percent.

13. Small and Medium Industry Loan Scheme II (Fisheries activities only)

Under this scheme, loans are being extended to members of the same cooperatives which are being targeted by scheme 12, however for the sole purpose of financing 'multi-day' boats. Similar lending procedures are being followed as under scheme 12 and loan recovery is slightly better, with 77 percent of the principal being recovered.

The capital subsidy portion is used to diversify fishing effort from coastal to off-shore fishing.

14. BOBP Credit Scheme: already described in text
15. New Enterprise Scheme for Self Employment (Fisheries activities only)
16. Poverty Alleviation Credit Scheme (Fisheries activities only)
17. Janasaviya Credit Scheme (Fisheries activities only)
18. NYSCO Credit Scheme (Fisheries activities only).

These schemes (15-18) are all Government sponsored supply-oriented, and anti-poverty programmes, with a considerable social-welfare element, subsidized interest rates and special selection procedures.

This applies particularly to scheme 17 where loan recovery is poor, while it is modest under the other schemes.

Activities financed under these schemes are fisheries related as well as non-fisheries income generating activities.

19. General Loan Scheme (Fisheries activities only)
20. Small and Medium Industry Loan Scheme III (Fisheries activities only).

Loan utilization and recovery is again better in these two schemes under which ice-plants and refrigerated vehicles (scheme 19) and fishing craft and gear (scheme 20) are financed.

Credit without subsidy is provided to individuals following similar procedures as under scheme 13.

COMMUNITY-BASED COASTAL FISHERIES MANAGEMENT IN ASIA AND THE PACIFIC

by

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1. INTRODUCTION

The IPFC Symposium on Socio-economic Issues in Coastal Fisheries Management held in Bangkok in November 1993 identified that fisheries management programmes implemented in the region had rarely contributed to the improvement of fishermen's incomes. It was noted that the problem of low fishermen's incomes would not immediately disappear with the removal of open access which had been considered as one of the major reasons for the poor state of fishermen's households.

It was also noted that the lack of alternative employment opportunities contributes to the low income of fishermen since it is highly probable that the low incomes earned by many fishermen result from low opportunity incomes. In this context, the Symposium recommended that governments should promote economic diversification and enterprise development in rural fishing communities to generate opportunities for alternative employment for the coastal fisheries sector.

"Top down" centrally controlled management regimes are not effective if it does not reflect fishermen's needs on management planning. The shortcomings of "top down" approaches could be overcome by involving fishermen in the process of planning, designing and implementation of fishery management schemes. This recognition has prompted governments to consider new means of managing fisheries integrating participatory approaches in fishery management strategies. The fishery management under the authority of the central government stresses mainly biological, conservation and economic areas of fishery management, whereas participatory approaches stress the importance of social and cultural aspects of fishing communities in addition to economic gains that fishermen seek.

Successful experiments in community-based fisheries management have evidenced that if fishermen play decisive roles in management decisions (e.g. determination of sustainable resource levels, allocations to fishermen), there is a high rate of adherence to fishery regulations. Such management decisions are usually made to bring forth the increase of incomes. Provision

of economic incentives and assurance of resource availability through appropriate management (e.g. combining marketing with management measures) would enhance the degree of fishermen's compliance with regulatory measures.

2. SUCCESSFUL EXAMPLES OF COMMUNITY-BASED FISHERY MANAGEMENT

Community-based fisheries management offers potential as a way to improve the conservation of fish resources in the coastal areas. The government does not have the resources required to manage a great many fishermen and enforce resource conservation for long coast lines. Inshore community fisheries management could be supported in selected locations where topographic conditions are suitable. The past experience shows that community management works best where there is a tradition of local knowledge on the state of fish resources, traditional methods for conservation and respect for community leaders and viable organizations in fishing communities.

Japan has a very effective system of community fisheries management which is operated by fisheries cooperatives. These cooperatives are given exclusive fishing rights to control fisheries resources adjacent to villages. The legal status of fishing rights in Japan is equal to that of land ownership and coastal areas under the jurisdiction of fisheries cooperatives are, in effect, the private property of the fisheries cooperatives concerned. The area covered by fishing rights stretches some 10 km from the shore at the most and averages two to three kilometres. Unless fishermen are the members of cooperatives, they are not allowed to fish in these areas. This legal setup obliges inshore fishermen to join cooperatives. In fact, the great majority of coastal fishermen in Japan are the members of cooperatives which brings about strong solidarity among them.

Because coastal waters belong to fishermen, they are interested in the conservation and management of coastal fisheries resources. Regulations are enforced by each cooperative to prevent reckless fishing. In order to enhance fishery resources each cooperative endeavour to improve its fishing ground through stocking programmes of seedlings of fish, shellfish and seaweeds. Research institutes provide necessary information combined with extension services offered by prefectural government. Because the network of cooperatives is firmly established through three tier systems, (i.e. national, prefectural, village), policies on the use of the nation's fishery resources filters down effectively to individual fishermen from the central government through prefectural government and fishermen's cooperatives.

The traditional sasi system in *Maluk of Indonesia* contains a variety of legal and institutional arrangements which promote effective micro-environmental management, economic distributive justice (fairness or equity), effective law enforcement, and secure economic benefits to the local community (Zerner, 1992). Local fishermen have devised a variety of regulations which affect (a) timing of fishing seasons, (b) permitted and unpermitted gear, (c) permitted and prohibited fishing behaviours or techniques, (d) species or stock specific regulations, (e) place specific fishing seasons within the community waters, (f) boundary concepts and physical markets. The regulations are enforced by the communities concerned and a variety of sanctions

are imposed to violators which include fines, public shaming, temporary confiscation of fishing gear, permanent confiscation and sale of the gear, and corporal punishment.

Although these customary rights and practices are recognized extremely effective to sustain local fishery resources, they are not formally integrated into the national legal framework for protection, implementation or litigation.

This has led to changes in the allocation of rights and the management of inshore marine environments, which include appropriation of the *sasi* system by government officials. Also, private sector control of the flow of credit to local fishers and control of the flow of benefits from community-managed reef resources may affect equity and *de facto* rights. Community-based legal systems and institutions for fisheries management are no panacea: problems in national fisheries law and administration remain and must be worked out at the both central and provincial level.

Village-based marine conservation has experienced a remarkable upsurge in Vanuatu since 1990 (Johannes, 1994). Vanuatu's shallow-water marine resources are legally owned and controlled by villagers. Whilst traditional fishing taboos had existed focusing on trochus and green snails for many years, since 1990 their controls have been diversified to cover other marine resources such as crabs, *Beche-de-mer*, turtles, clams, octopus, parrotfish, rudderfish and rock lobsters. Restrictive measures have been implemented in respect of fishing areas, fishing seasons, body sizes, gears (e.g gillnets and night spearing using underwater torches are banned). Educational efforts of the Fisheries Department has played a major role for strengthening management measures in inshore waters.

Fishermen generally have a good knowledge on local resources such as the seasonal movements and spawning aggregations of fishes in inshore waters. There is no single body of custom in relation to marine tenure in Vanuatu; there are over 100 different language groups with differing resource tenure customs. In many places land and sea tenure rights are inherited through men, but in some it passes down through women.

Ownership of marine resources created opportunities only for resource management but also for dispute. There are six levels of dispute-resolution available for fishing rights owners within a clan. In the event that such dispute solving process still proves unsatisfactory a dispute can be taken to an Island Court which is staffed by justices who are knowledgeable in custom.

The Department of Fisheries has provided advice and motivation in the development of management strategies. Strengthening extension in fishery management is considered important to increase the impact of management measures.

3. REQUIREMENTS FOR DEVELOPMENT OF COMMUNITY-BASED FISHERIES MANAGEMENT

There are various requirements which need to be taken in account when community-based fishery management is planned and promoted:

- (a) *Cohesive community organizations*: existence of voluntary formed community organizations (e.g. cooperatives, associations, community councils etc.) with great solidarity
- (b) *Territorial use rights in Fisheries (TURF)*: demarcated areas are established in which the right to harvest a particular stock with the use of a certain kind of gear or vessel is exercised
- (c) *Initiatives by communities*: local communities have a high incentive to regulate access and exploitation pressure on high-value species
- (d) *Modifiable*: regulations can be easily reshaped to accommodate changing circumstances with a minimum cumbersome legislative proceedings
- (e) *Enforcement*: fishermen are involved in the monitoring, control and surveillance of regulatory measures
- (f) *Economic benefits*: regulating access the fishery resources from outside are the guarantees of economic benefits to the local coastal communities concerned
- (g) *Respect for community authority*: this is essential to maintain the solidarity of the community.

4. PARTICIPATORY APPROACHES IN FISHERY MANAGEMENT AND FISHERMEN'S ORGANIZATIONS

There is a need for strengthening fisheries cooperatives to enhance effective participation of fishermen in the management process. In many countries in the region fishermen have had negative experience with cooperatives due to their high rate of economic failure. A satisfactory level of economic performance is essential to acquire fishermen's trustworthiness. Unless fishermen change their perceptions towards cooperatives, fishermen will not accept cooperatives' new undertakings to manage fisheries.

In addition to economic viability, the following checkpoints may be considered in determining whether fisheries cooperatives could undertake management tasks:

- (a) *Social viability*: the great majority of fishermen should be the member of a cooperative; a high rate of homogeneity.

- (b) Equitable distribution of benefits and prevention of possible misuse of power by cooperative leaders.
- (c) Availability of government assistance in terms of legal backup, information on the state of fishery resources, subsidies, extension and research.
- (d) Possibilities of establishing linkages between cooperatives' economic functions and regulatory measures.

5. CONCLUSIONS

Management measures are not a permanent setup and need to be revised in accordance with the conditions of fish resources which change constantly. Awareness building is important among fishermen of the merit of fishery management in terms of higher economic returns. For example, mesh size limitation will give fishermen opportunities to increase incomes since large sized fish fetch higher prices than small ones.

A high management cost constrains fishery management development. The merit of community-based fishery management is its cost effectiveness. Enforcement of fisheries regulations is greatly facilitated when fishermen understand the purpose of the regulation and support it. To achieve this fishermen involvement in the management of fisheries is crucial. Fisheries enforcement can be assisted by decentralizing the management authority involving the fishing communities in the intent of the management regime.

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The Regional Consultation on Institutional Credit for Sustainable Fish Marketing, Capture and Management in Asia and the Pacific, held in Manila, the Philippines from 3 to 7 July 1995, was organized by the Asia and Pacific Rural and Agricultural Credit Association (APRACA) Consultancy Services with the support of FAO. The consultation was hosted by the Landbank of the Philippines and attended by 45 participants representing national financial institutions, fisheries administrations, fishery industry associations, non-governmental organizations, bilateral and multilateral development agencies, fisheries and rural development projects and intergovernmental bodies. The aim of the consultation was to review the institutional credit arrangements for fish marketing and utilization as well as to discuss ongoing credit programmes for the fisheries sector in the light of fisheries management measures and regulations that are at present being introduced in most countries of the region. The consultation looked at the current and future investment and credit needs for fish marketing and processing and examined these needs in relation to community-based fisheries management. Measures to strengthen credit delivery and recovery in general as well as in the fisheries sector were also discussed. National and regional follow-up activities were agreed upon which might enhance the efficiency of fisheries credit operations and facilitate the access to credit for community-based fisheries management and for fish processing and marketing. These activities include a regional workshop on insurance for aquaculture and capture fisheries, the use of microcomputer software for monitoring of loan recovery, pilot credit programmes in support of community-based fisheries management, the operation of small-scale fish processing plants by women's associations, the establishment of fishery investment support units at national banks and information dissemination through APRACA Consultancy Services.

